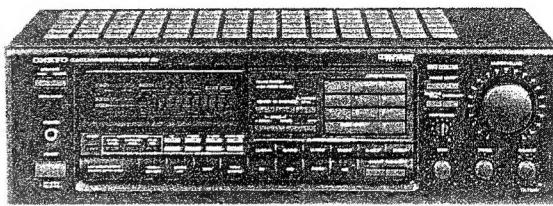
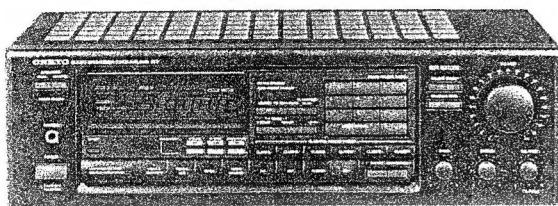


# ONKYO SERVICE MANUAL

Ref. No. 0M3399

## QUARTZ SYNTHESIZED TUNER AMPLIFIER MODEL TX-7830



Silver and Black models

## TABLE OF CONTENTS

**SAFETY-RELATED COMPONENT WARNING!!**  
COMPONENTS IDENTIFIED BY MARK  $\Delta$  ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

Specifications.....	2
Block diagram Tuner section .....	3
Amplifier section Model TX-7840.....	4
Model TX-7830.....	5
Exploded view Model TX-7840.....	6
Model TX-7830.....	8
Parts list Model TX-7840.....	7
Model TX-7830.....	9
Microprocessor descriptions	
Connection diagram.....	10
Terminal description.....	11
IC block diagrams and descriptions.....	13
Adjustment procedures .....	24
Printed circuit board views .....	27
Schematic diagram .....	33
Model TX-7840.....	33
Model TX-7830.....	41
Printed circuit board-parts list	
Model TX-7840.....	47
Model TX-7830.....	51
Packing procedures.....	56
Service procedures.....	57

**ONKYO<sup>®</sup>**  
**AUDIO COMPONENTS**

## SPECIFICATIONS

### OTHER MODELS

#### AMPLIFIER SECTION

	TX-7830	TX-7840
Power Output:	Stereo mode 80 watts per channel min. RMS. at 8 ohms, both channels driven, from 20Hz to 20,000Hz, with no more than 0.08% total harmonic distortion.	Stereo mode 60 watts per channel min. RMS. at 8 ohms, both channels driven, from 20Hz to 20,000Hz, with no more than 0.08% total harmonic distortion.
Musical Power Output:	2 x 190 watts at 4 ohms 1 kHz DIN 2 x 130 watts at 8 ohms 1 kHz DIN	2 x 160 watts at 4 ohms 1 kHz DIN 2 x 100 watts at 8 ohms 1 kHz DIN
Continuous Power Output:	2 x 115 watts at 4 ohms 1 kHz DIN 2 x 90 watts at 8 ohms 1 kHz DIN	2 x 90 watts at 4 ohms 1 kHz DIN 2 x 70 watts at 8 ohms 1 kHz DIN
	Surround/Simul mode 75 watts per channel min. RMS. at 8 ohms both channels driven, from 20Hz to 20,000Hz, with no more than 0.08% total harmonic distortion. (FRONT) 12 watts per channel min. RMS. at 8 ohms 1,000Hz with no more than 0.8% total harmonic distortion. (REAR or REMOTE)	Surround/Simul mode 55 watts per channel min. RMS. at 8 ohms both channels driven, from 20Hz to 20,000Hz, with no more than 0.08% total harmonic distortion. (FRONT) 12 watts per channel min. RMS. at 8 ohms 1,000Hz with no more than 0.8% total harmonic distortion. (REMOTE)
Total Harmonic Distortion:	0.08% at rated power (FRONT)	0.08% at rated power (FRONT)
IM Distortion:	0.08% at rated power (FRONT)	0.08% at rated power (FRONT)
Damping Factor:	60 at 8 ohms (FRONT)	60 at 8 ohms (FRONT)
Sensitivity and Impedance:	Phono: 2.5mV/50 kohms CD/Tape Play: 150mV/50 kohms Tape Rec: 150mV/2.2 kohms Pre out (REAR): 1V, 2.2 kohms Pre out (CENTER): 1V, 2.2 kohms	Phono: 2.5mV/50 kohms CD/Tape Play: 150mV/50 kohms Tape Rec: 150mV/2.2 kohms
Phono Overload:	120mV RMS. at 1,000 Hz, 0.08 % THD.	120mV RMS. at 1,000 Hz, 0.08% THD.
Frequency Response:	20 to 30,000 Hz, +/-1 dB	20 to 30,000 Hz, +/-1 dB
RIAA Deviation:	20 to 20,000 Hz, +/-0.8 dB	20 to 20,000 Hz, +/-0.8 dB
Tone Control:	BASS: +/-10 dB at 100 Hz TREBLE: +/-10 dB at 10,000 Hz	BASS: +/-10 dB at 100 Hz TREBLE: +/-10 dB at 10,000 Hz
Signal to Noise Ratio:	PHONO: 80 dB (IHF A, 5mV input) CD/TAPE: 100 dB (IHF A)	PHONO: 80 dB (IHF A, 5mV input) CD/TAPE: 100 dB (IHF A)
Muting:	-∞ dB	-∞ dB

#### VIDEO SECTION (TX-7830/7840)

Signal sensitivity and impedance

VDP/VCR normal input, output: 1 Vp-p, 75 ohms

#### TUNER SECTION

##### FM:

Tuning Range:	87.5 — 108.0MHz (50kHz steps)
Usable Sensitivity:	Mono: 11.2dBf, 1.0μV, 75 ohms 0.9μV (S/N 26dB, 40kHz Devi.) 75 ohms DIN
	Stereo: 18.0dBf, 2.2μV, 75 ohms 23μV (S/N 46dB, 40kHz Devi.) 75 ohms DIN
50dB Quieting Sensitivity:	Mono: 18.0dBf, 2.2μV, 75 ohms Stereo: 37.2dBf, 20μV, 75 ohms
Capture Ratio:	1.5dB
Image Rejection Ratio:	85dB
IF Rejection Ratio:	90dB
Signal-to-Noise Ratio:	Mono: 73dB Stereo: 67dB
Selectivity	50dB DIN (±300kHz, 40kHz devi.)
AM Suppression Ratio:	50dB
Harmonic Distortion:	Mono: 0.15% Stereo: 0.25%
Frequency Response:	30 — 15,000Hz ± 1.5dB
Stereo Separation:	45dB at 1kHz

##### AM:

Tuning Range:	522 — 1611kHz (9kHz steps)
Usable Sensitivity:	30μV
Image Rejection Ratio:	40dB
IF Rejection Ratio:	40dB
Signal-to-Noise Ratio:	40dB
Harmonic Distortion:	0.7%

##### GENERAL

Dimensions (W × H × D):	455 × 150 × 331.5 mm 17-15/16" × 5-7/8" × 13-1/16"
Weight:	TX-906: 10.8 kg, 23.8 lbs TX-904: 9.7 kg, 21.4 lbs

Specifications and features are subject to change without notice.

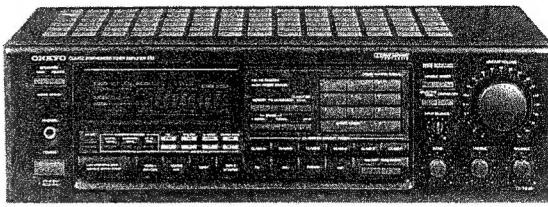
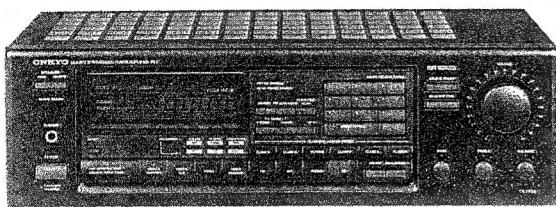
# ONKYO SERVICE MANUAL

Ref. No. 0M3399

## QUARTZ SYNTHESIZED TUNER AMPLIFIER MODEL TX-7830 MODEL TX-7840



ONKY - 00441



Silver and Black models

## TABLE OF CONTENTS

**SAFETY-RELATED COMPONENT WARNING!!**  
 COMPONENTS IDENTIFIED BY MARK  $\Delta$  ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

Specifications.....	2
Block diagram Tuner section .....	3
Amplifier section Model TX-7840.....	4
Model TX-7830.....	5
Exploded view Model TX-7840.....	6
Model TX-7830.....	8
Parts list Model TX-7840.....	7
Model TX-7830.....	9
Microprocessor descriptions	
Connection diagram.....	10
Terminal description.....	11
IC block diagrams and descriptions.....	13
Adjustment procedures .....	24
Printed circuit board views .....	27
Schematic diagram .....	33
Model TX-7840.....	33
Model TX-7830.....	41
Printed circuit board-parts list	
Model TX-7840.....	47
Model TX-7830.....	51
Packing procedures.....	56
Service procedures.....	57

**ONKYO<sup>®</sup>**  
**AUDIO COMPONENTS**

# SPECIFICATIONS

## OTHER MODELS

### AMPLIFIER SECTION

	TX-7830	TX-7840
Power Output:	Stereo mode 80 watts per channel min. RMS. at 8 ohms, both channels driven, from 20Hz to 20,000Hz, with no more than 0.08% total harmonic distortion.	Stereo mode 60 watts per channel min. RMS. at 8 ohms, both channels driven, from 20Hz to 20,000Hz, with no more than 0.08% total harmonic distortion.
Musical Power Output:	2 x 190 watts at 4 ohms 1 kHz DIN 2 x 130 watts at 8 ohms 1 kHz DIN	2 x 160 watts at 4 ohms 1 kHz DIN 2 x 100 watts at 8 ohms 1 kHz DIN
Continuous Power Output:	2 x 115 watts at 4 ohms 1 kHz DIN 2 x 90 watts at 8 ohms 1 kHz DIN	2 x 70 watts at 8 ohms 1 kHz DIN
	Surround/Simul mode 75 watts per channel min. RMS. at 8 ohms both channels driven, from 20Hz to 20,000Hz, with no more than 0.08% total harmonic distortion. (FRONT) 12 watts per channel min. RMS. at 8 ohms 1,000Hz with no more than 0.8% total harmonic distortion. (REAR or REMOTE)	Simul mode 55 watts per channel min. RMS. at 8 ohms both channels driven, from 20Hz to 20,000Hz, with no more than 0.08% total harmonic distortion. (FRONT) 12 watts per channel min. RMS. at 8 ohms 1,000Hz with no more than 0.8% total harmonic distortion. (REMOTE)
Total Harmonic Distortion:	0.08% at rated power (FRONT)	0.08% at rated power (FRONT)
IM Distortion:	0.08% at rated power (FRONT)	0.08% at rated power (FRONT)
Damping Factor:	60 at 8 ohms (FRONT)	60 at 8 ohms (FRONT)
Sensitivity and Impedance:	Phono: 2.5mV/50 kohms CD/Tape Play: 150mV/50 kohms Tape Rec: 150mV/2.2 kohms Pre out (REAR): 1V, 2.2 kohms Pre out (CENTER): 1V, 2.2 kohms	Phono: 2.5mV/50 kohms CD/Tape Play: 150mV/50 kohms Tape Rec: 150mV/2.2 kohms
Phono Overload:	120mV RMS. at 1,000 Hz, 0.08 % THD.	120mV RMS. at 1,000 Hz, 0.08% THD.
Frequency Response:	20 to 30,000 Hz, +/-1 dB	20 to 30,000 Hz, +/-1 dB
RIAA Deviation:	20 to 20,000 Hz, +/-0.8 dB	20 to 20,000 Hz, +/-0.8 dB
Tone Control:	BASS: +/-10 dB at 100 Hz TREBLE: +/-10 dB at 10,000 Hz	BASS: +/-10 dB at 100 Hz TREBLE: +/-10 dB at 10,000 Hz
Signal to Noise Ratio:	PHONO: 80 dB (IHF A, 5mV input) CD/TAPE: 100 dB (IHF A)	PHONO: 80 dB (IHF A, 5mV input) CD/TAPE: 100 dB (IHF A)
Muting:	-∞ dB	-∞ dB

### VIDEO SECTION (TX-7830/7840)

Signal sensitivity and impedance  
VDP/VCR normal input, output: 1 Vp-p, 75 ohms

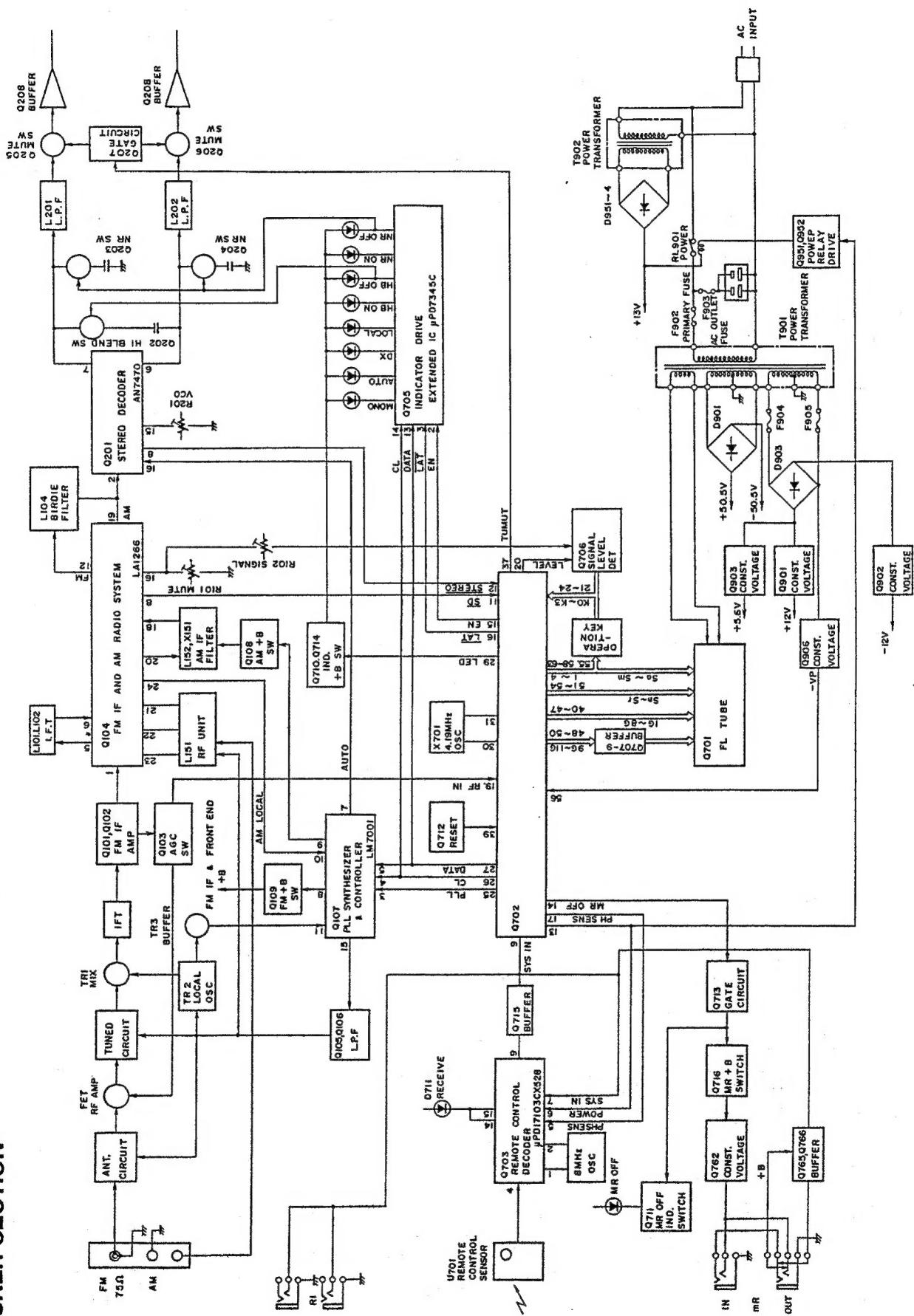
### TUNER SECTION

FM:	AM:
Tuning Range: 87.5 — 108.0MHz (50kHz steps)	Tuning Range: 522 — 1611kHz (9kHz steps)
Usable Sensitivity: Mono: 11.2dBf, 1.0μV, 75 ohms 0.9μV (S/N 26dB, 40kHz Devi.) 75 ohms DIN	Usable Sensitivity: 30μV
Stereo: 18.0dBf, 2.2μV, 75 ohms 23μV (S/N 46dB, 40kHz Devi.) 75 ohms DIN	Image Rejection Ratio: 40dB
50dB Quieting Sensitivity: Mono: 18.0dBf, 2.2μV, 75 ohms Stereo: 37.2dBf, 20μV, 75 ohms	IF Rejection Ratio: 40dB
Capture Ratio: 1.5dB	Signal-to-Noise Ratio: 40dB
Image Rejection Ratio: 85dB	Harmonic Distortion: 0.7%
IF Rejection Ratio: 90dB	
Signal-to-Noise Ratio: Mono: 73dB Stereo: 67dB	<b>GENERAL</b>
Selectivity 50dB DIN (±300kHz, 40kHz devi.)	Dimensions (W × H × D): 455 × 150 × 331.5 mm 17-15/16" × 5-7/8" × 13-1/16"
AM Suppression Ratio: 50dB	Weight: TX-906: 10.8 kg, 23.8 lbs TX-904: 9.7 kg, 21.4 lbs
Harmonic Distortion: Mono: 0.15% Stereo: 0.25%	
Frequency Response: 30 — 15,000Hz ± 1.5dB	
Stereo Separation: 45dB at 1kHz	

Specifications and features are subject to change without notice.

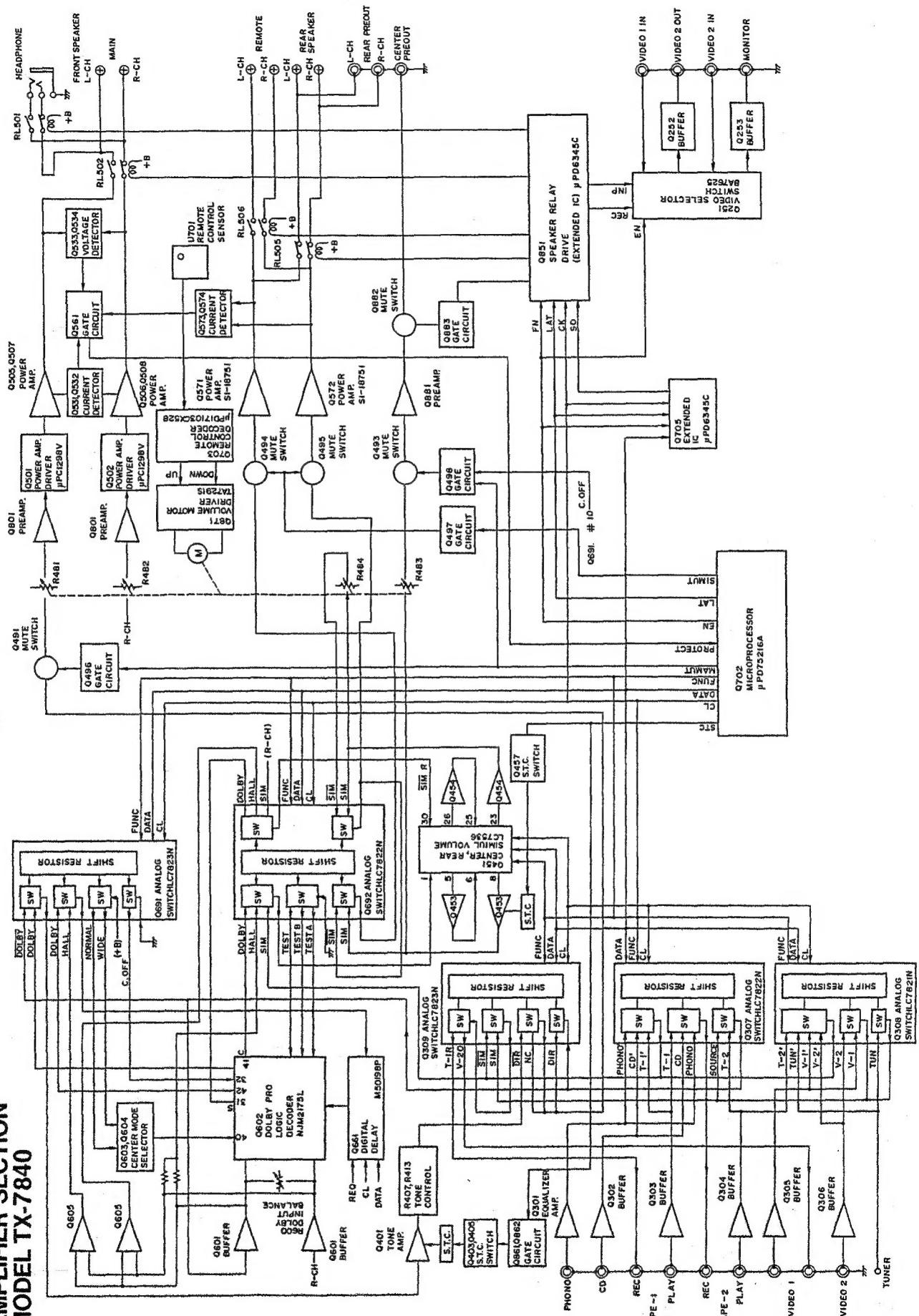
## BLOCK DIAGRAM TUNER SECTION

TX-7830/7840

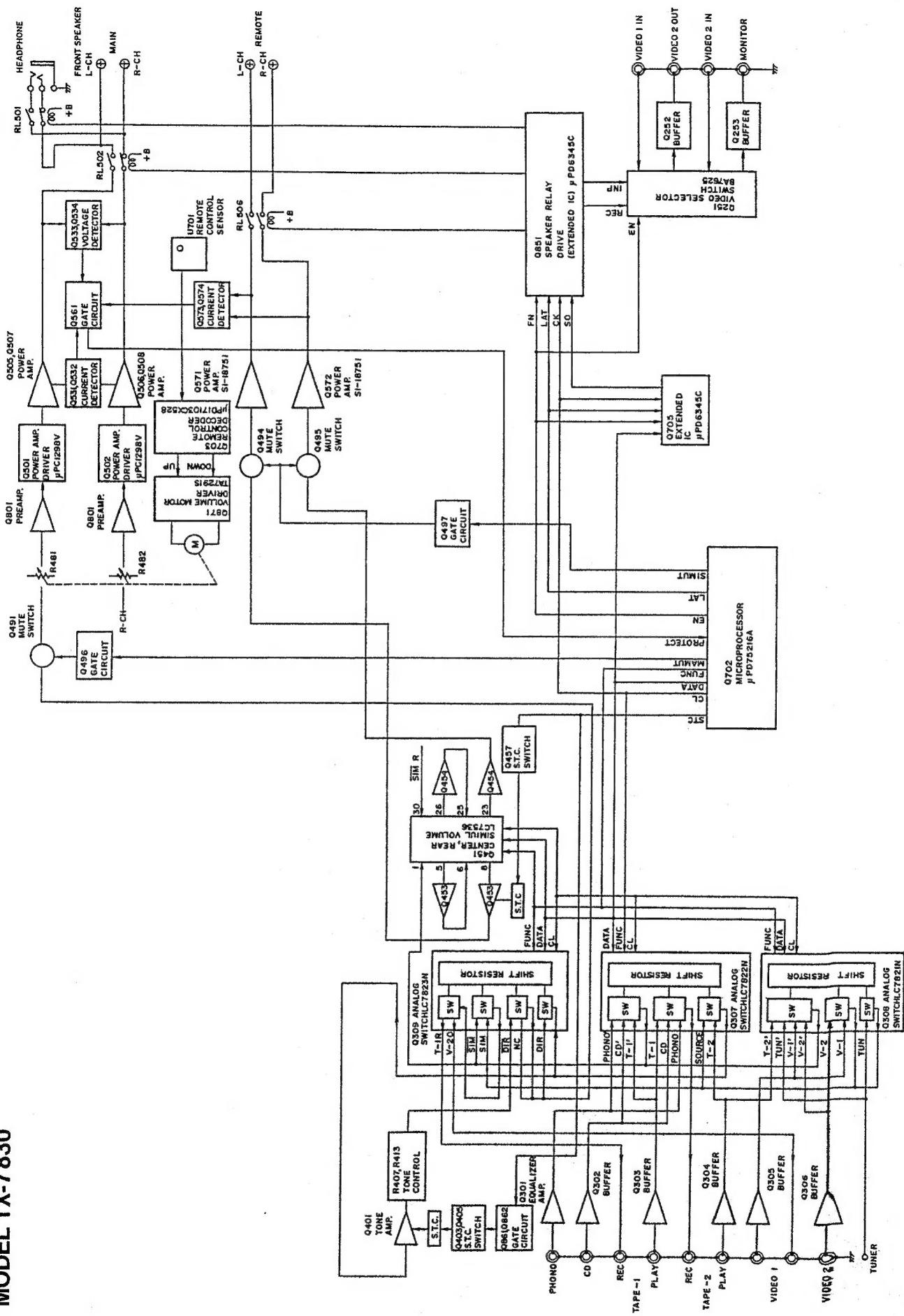


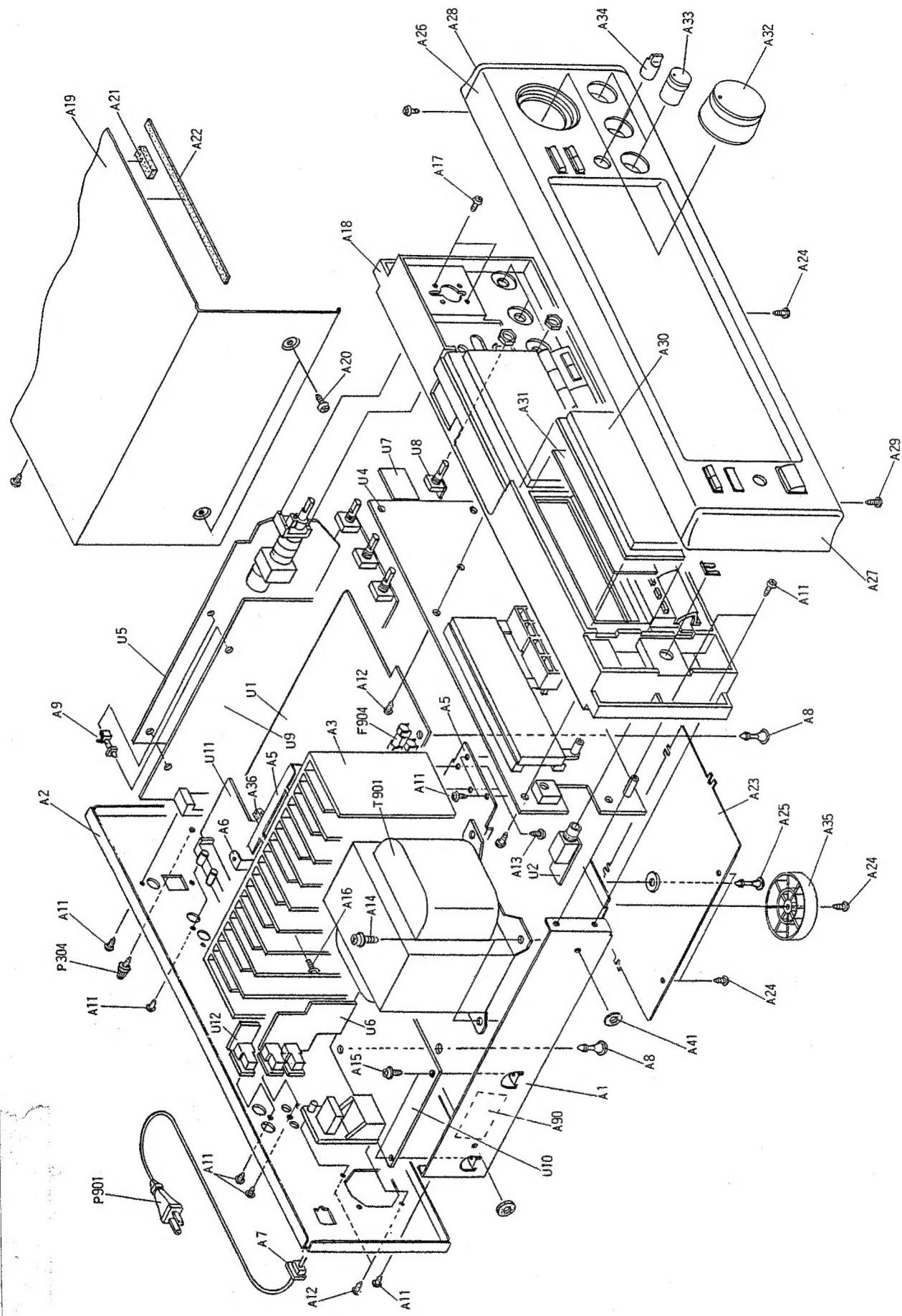
**BLOCK DIAGRAM  
AMPLIFIER SECTION  
MODEL TX-7840**

**TX-7840**



## MODEL TX-7830



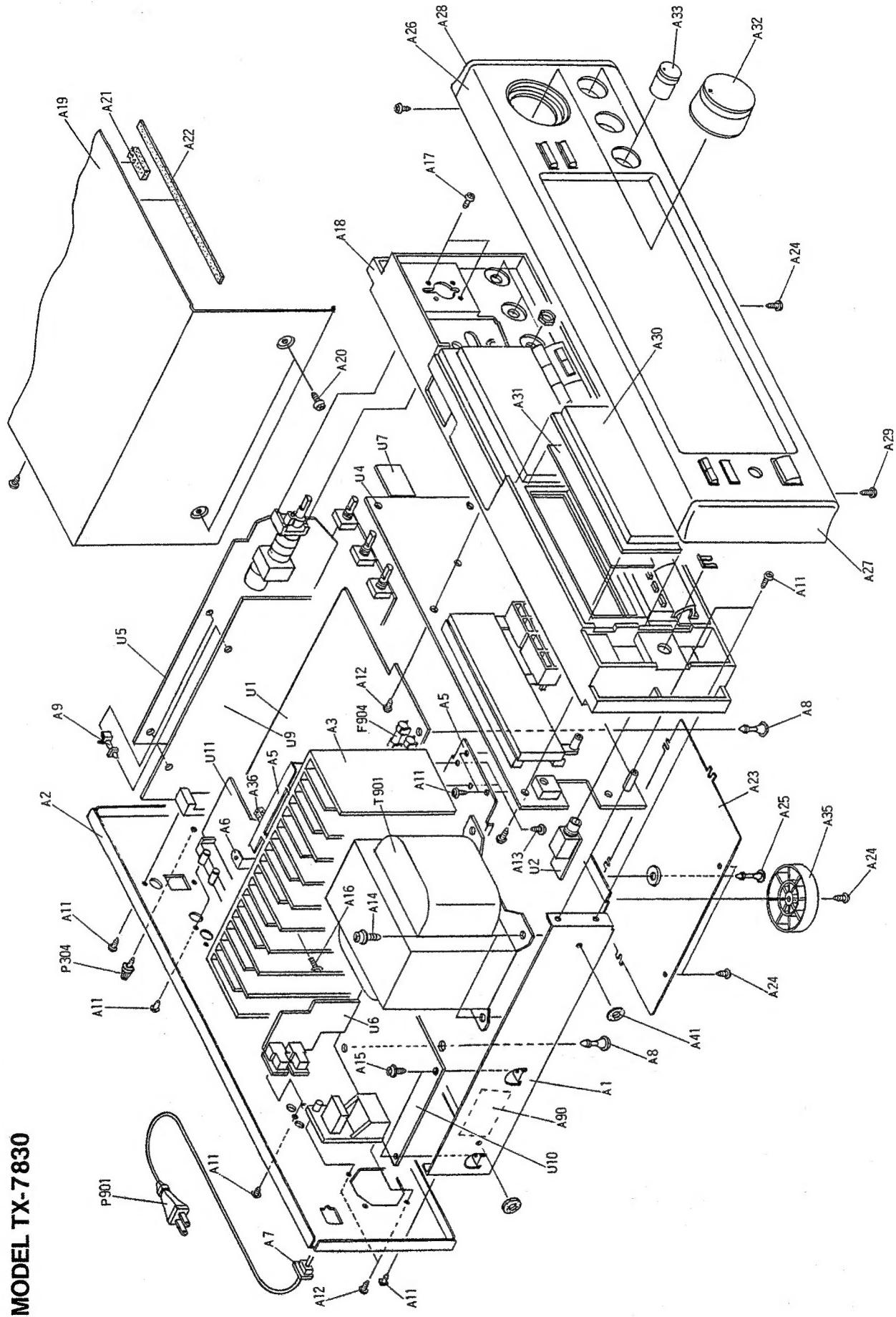
**EXPLODED VIEW**

## PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
A1	27100239A	Chassis	F903	252075	△ 2.5A-SE-EAK,AC outlet fuse
A2	27121445	Back panel	F904,F905	252078	△ 5A-SE-EAK,Secondary fuse
A3	27160286	Radiator	JL701	2041302010	NCFCL-302010,Flat cable
A4	27141474	Bracket SH	P304	25060044	Terminal GND
A5	27130653	Bracket H	P901	253148	△ AS-CEE,Power supply cord
A6	27141498	Bracket S	Q505,Q506	2201653,	2SC3856-O,
A7	27300750	△ Bushing		2201654,	2SC3856-Y,
A8	27190657	KGLS-18RT,Holder		2201655,	2SC3856-P,
A9	27190062	KGLS-12S,Holder		2202272 or	2SC3907-R or
A10	801433	Sems tapping screw		2202273	2SC3907-O,Power transistors
A11	834430088	3TTS+8B(BC),Self-tapping screw	Q507,Q508	2201663,	2SA1492-O,
A12	833430080	3TTP+8B(BC),Self-tapping screw		2201664,	2SA1492-Y,
A13	833430108	3TTS+10B(BC),Self-tapping screw		2201665,	2SA1492-P,
A14	830440089	4TTC+8C(BC),Self-tapping screw		2202262 or	2SA1516-R or
A15	831130088	3TTW+8B,Self-tapping screw		2202263	2SA1516-O,Power transistors
A16	82143015	3P+15FN(BC),Pan head screw	T901	2300667	△ NPT-1110P,Power transformer
A17	82143006	3P+6FN(BC),Pan head screw	U1	1A274587-1A	NAAF-4187-1A,Selector and power
A18	27110638B	Front bracket ass'y			amplifier pc board ass'y
A19	28184476A	Top cover	U2	1A274588-1	NAETC-4188-1,Headphone terminal
A20	834430088	3TTS+8B(BC),Self-tapping screw	U4	1A274589-1A	pc board ass'y
A21	28141132	Cushion			NAFIS-4189-1A,Display circuit
A22	28140024	Cushion			pc board ass'y
A23	27170280A	Bottom panel	U5	1A274590-1	NAAF-4190-1,Volume and surround
A24	834430088	3TTS+8B(BC),Self-tapping screw	U6	1A274591-1A	circuit pc board ass'y
A25	27190657	KGLS-18RT,Holder			NADG-4191-1A,R/MR terminal
A26	1A275121	Front panel ass'y			pc board ass'y
A27	28125234A	End cap L	U7	1A274592-1	NASW-4192-1,Operation switch pc board ass'y
A28	28125235A	End cap R	U8	1A274593-1	NAETC-4193-1,Input balance volume pc board ass'y
A29	833430080	3TTP+8B(BC),Self-tapping screw	U9	1A274594-1A	NARF-4194-1A,Tuner circuit pc board ass'y
A30	28911596	Clear plate	U10	1A274595-1A	NAPS-4195-1A,Power supply circuit pc board
A31	28133262Y	Back plate			ass'y
A32	28324372	Knob VOLUME	U11	1A274596-1A	NAAF-4196-1A,Video and rear amplifier pc board
A33	28324376A	Knob TONE			ass'y
A34	28324378	Knob IB	U12	1A274599-1	NAETC-4199-1,Rear preout pc board ass'y
A35	27175251 or	Leg	U14	1A274561-1	NAETC-4261-1,Terminal pc board ass'y
	27175251-1				
A36	28140020	Cushion			
A41	27270212	Spacer			
A90	29360626-1	Fuse label			
F902	252076	△ 3.15A-SE-EAK,Primary fuse			

NOTE: THE COMPONENTS IDENTIFIED BY  
MARK △ ARE CRITICAL FOR RISK OF  
FIRE AND ELECTRIC SHOCK. REPLACE  
ONLY WITH PARTS NUMBER SPECIFIED.

**EXPLODED VIEW**  
**MODEL TX-7830**

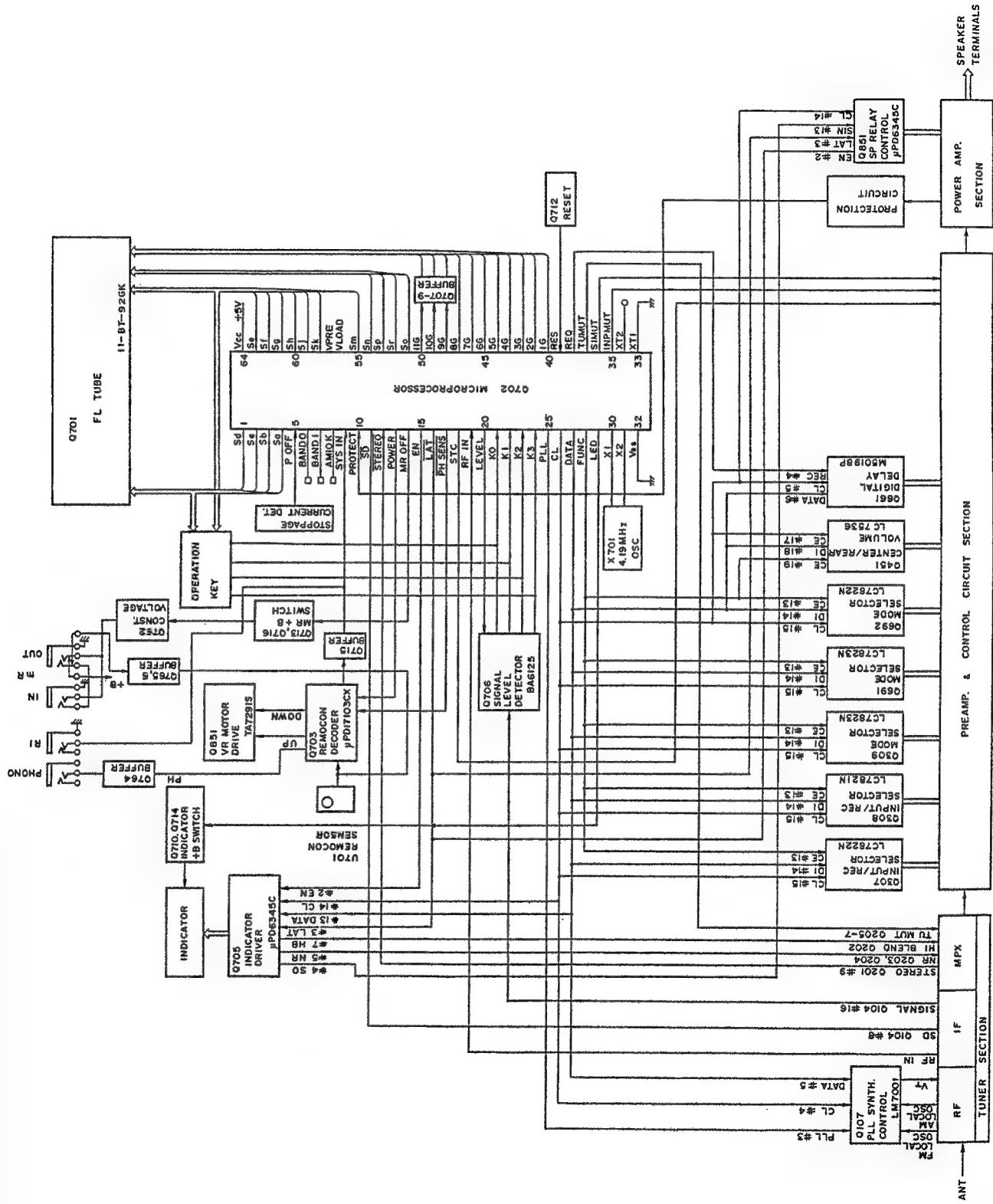


## PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
A1	27100239A	Chassis	F903	252075	▲ 2.5A-SE-BAK,AC outlet fuse
A2	27121450	Back panel	F904,F905	252078	▲ 5A-SE-EAK,Secondary fuse
A3	27160287	Radiator	JL701	2041302010	NCFCL-302010,Flat cable
A4	27141474	Bracket SH	P304	25060044	Terminal GND
A5	27130653	Bracket H	P901	253148	△ AS-CEE,Power supply cord
A6	27141498	Bracket S	Q505,Q506	2202523, 2202524, 2202526,	2SC4468-O, 2SC4468-Y, 2SC4468-P,
A7	27300750	△ Bushing		2202292 or 2202293	2SC3182N-R or 2SC3182N-O,Power transistors
A8	27190657	KGLS-18RT,Holder		2202513, 2202514,	2SA1695-O, 2SA1695-Y,
A9	27190062	KGLS-12S,Holder		2202516, 2202282 or 2202283	2SA1695-P, 2SA1265N-R or 2SA1265N-O,Power transistors
A10	801433	Sems tapping screw	Q507,Q508	2300675	△ NPT-1110P,Power transformer
A11	834430088	3TTS+8B(BC),Self-tapping screw	T901	1A276587-2A	△ NAAFN-4187-2A,Selector and power
A12	834430080	3TTP+8B(BC),Self-tapping screw	U1	1A276588-2	amplifier pc board ass'y
A13	834430108	3TTS+10B(BC),Self-tapping screw		1A276588-2	NAETC-4188-2,Headphone terminal
A14	83440089	4TTG-8C(BC),Self-tapping screw		1A276589-2A	pc board ass'y
A15	831130088	3TTW+8B,Self-tapping screw		1A276590-2	NADIS-4189-2A,Display circuit
A16	82143015	3P+15FNF(BC),Pan head screw			pc board ass'y
A17	82143006	3P+6FNF(BC),Pan head screw			NAAFF-4190-2,Volume circuit
A18	27110639B	Front bracket ass'y <B>			pc board ass'y
	27110640B	Front bracket ass'y <S>			NADG-4191-2A,RJ/MR terminal
A19	28184476A	Top cover			pc board ass'y
A20	834430088	3TTS+8B(BC),Self-tapping screw	U4	1A276589-2A	NASW-4192-2,Operation switch pc board ass'y
A21	28141132	Cushion	U5	1A276590-2	NARF-4194-2A,Tuner circuit pc board ass'y
A22	28140024	Cushion			NAPS-4195-2A,Power supply circuit pc board
A23	27170280A	Bottom panel	U6	1A276591-2A	ass'y
A24	834430088	3TTS+8B(BC),Self-tapping screw			NAETC-4196-2A,Video and sub amplifier pc board
A25	27190657	KGLS-18RT,Holder			ass'y
A26	1A278121	Front panel ass'y <B>	U7	1A276592-2	NOTE:<B>:Only Black model
	1A279121	Front panel ass'y <S>	U9	1A276594-2A	<S>:Only Silver model
A27	28125234A	End cap L	U10	1A276595-2A	
A28	28125235A	End cap R			
A29	834430080	3TTP+8B(BC),Self-tapping screw	U11	1A276596-2A	
A30	28191596	Clear plate			
A31	28133262Y	Back plate			
A32	28324372	Knob VOLUME <B>			
	28324374	Knob VOLUME <S>			
A33	28324376A	Knob TONE <B>			
	28324377A	Knob TONE <S>			
A35	27175251 or 27175251-1	Leg			
A36	28140020	Cushion			
A41	27270212	Spacer			
A90	29360626-1	Fuse label			
F902	252076	△ 3.15A-SE-EAK,Primary fuse			

NOTE: THE COMPONENTS IDENTIFIED BY MARK ▲ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PARTS NUMBER SPECIFIED.

## MICROPROCESSOR DESCRIPTIONS



## Terminal Description

Pin No.	Symbol	Description												
1	Sd													
2	Sc	Segment and key scan output terminals. "H" when active.												
3	Sb													
4	Sa													
5	POFF	This is the input terminal for detection of the stoppage of electric current. "L" when the stoppage of electric current.												
6	BAND0	Initializing input terminal for region setting of FM band.												
7	BAND1													
8	AM 10K	Initializing input terminal for region setting of AM band.												
9	SYS IN	System code input terminal. "H" when active.												
10	PROTECT	Protection circuit operation detection input terminal. "H" when active.												
11	SD	Broadcast detection input terminal. "L" when active. Control the stop of auto tuning and output TU MUT(#37).												
12	STEREO	Stereo broadcast detection input terminal. "L" when stereo broadcast.												
13	POWER	Power control output terminal. "H" when the power turns on.												
14	MR	MR control output terminal. "H" when MR turns on.												
15	EN	Connect the terminal EN of the extended IC $\mu$ PD6345C.(Q705,Q851)												
16	LAT	Connect the terminal LAT of the extended IC $\mu$ PD6345C.												
17	PHONO	Phono control output terminal.												
18	S.TONE	SELECTIVE TONE control output terminal. "H" when this switch turns on.												
19	RF IN	RF mode input terminal. <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>RF IN</td> <td>RF MODE</td> </tr> <tr> <td>L</td> <td>LOCAL</td> </tr> <tr> <td>H</td> <td>DX</td> </tr> </table> Control the terminals LOCAL and DX of the extended IC.	RF IN	RF MODE	L	LOCAL	H	DX						
RF IN	RF MODE													
L	LOCAL													
H	DX													
20	LEVEL	Signal level input control output terminal.The signal level is inputed to terminals K0-K3 when this terminal is the high level.												
21	K0	Key scan input terminals when pin 20 is low. "H" when active.												
22	K1	Signal level input terminal when pin 20 is high.												
23	K2													
24	K3	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Key input of L</td> <td>Signal level</td> </tr> <tr> <td>none</td> <td>LEVEL0</td> </tr> <tr> <td>K0</td> <td>LEVEL1</td> </tr> <tr> <td>K0,K1</td> <td>LEVEL2</td> </tr> <tr> <td>K0,K1,K2</td> <td>LEVEL3</td> </tr> <tr> <td>K0,K1,K2,K3</td> <td>LEVEL4</td> </tr> </table>	Key input of L	Signal level	none	LEVEL0	K0	LEVEL1	K0,K1	LEVEL2	K0,K1,K2	LEVEL3	K0,K1,K2,K3	LEVEL4
Key input of L	Signal level													
none	LEVEL0													
K0	LEVEL1													
K0,K1	LEVEL2													
K0,K1,K2	LEVEL3													
K0,K1,K2,K3	LEVEL4													
25	PLL	Connect to the terminal CE of PLL IC (LM7001 Q107).												
26	CL	Connect to the terminal CL of PLL IC,terminal CL of analogue switches(Q307,308, Q309,Q601,Q692),terminal SECK of digital delay (Q661) and terminal CLK of electro volume. (Q451)												
27	DATA	Connect to the terminal DATA of PLL IC,terminal DI of analogue switches,terminal SEDATA of digital delay,terminal SIN of extended IC and terminal CLK of electro volume. (Q451)												

### FM band setting

BAND1	BAND0	REGION	FREQUENCY RANGE	CH. SPACE
0	0	U.S.A.	87.5-108.0MHz	50kHz
0	1	Europe	87.50-108.00MHz	50kHz
1	0	Saudi Arabia	87.50-108.00MHz	50kHz
1	1	Japan	76.0-90.0MHz	100kHz

### AM band setting

AM10K	REGION	FREQUENCY RANGE	CH. SPACE
1	U.S.A.	530-1710kHz	10kHz
0	Saudi Arabia	531-1602kHz	9kHz
0	Europe	522-1611kHz	9kHz

Pin No.	Symbol	Description
28	CE	Connect to the terminal CE of analogue switches and terminal CE of electro volume.
29	LED	LED indicator control output terminal.
30	X1	Ceramic oscillator connection terminal for main system clock.
31	X2	Connect to the 4.19MHz ceramic oscillator.
32	VSS	Ground terminal.
33	XT1	Ceramic oscillator connection terminal for sub system clock.
34	XT2	Not used.
35	INP MUT	Audio muting output terminal when input selector change over.
36	SIM MUT	SIM muting output terminal when input selector change over.
37	TU MUT	Tuner muting output terminal."H" when active.
38	REQ/MODE	Connect to the terminal REQ of digital delay.
39	RESET	Reset input terminal."L" when active.
40	D1	
41	D2	
42	D3	
43	D4	
44	D5	Digit output terminals."H" when active.
45	D6	
46	D7	
47	D8	
48	D9	
49	D10	
50	D11	
51	So	
52	Sr	
53	Sp	Segment output terminals."H" when active.
54	Sn	
55	Sm	
56	VLOAD	Pull-down resistor connection terminal of FIP controller/driver.
57	VPRE	Power supply terminal of output buffer of FIP controller/driver.
58	Sk	
59	Si	
60	Sh	Segment and key scan output terminals.
61	Sg	"H" when active.
62	Sf	
63	Se	
64	VDD	Power supply terminal.(+5V)

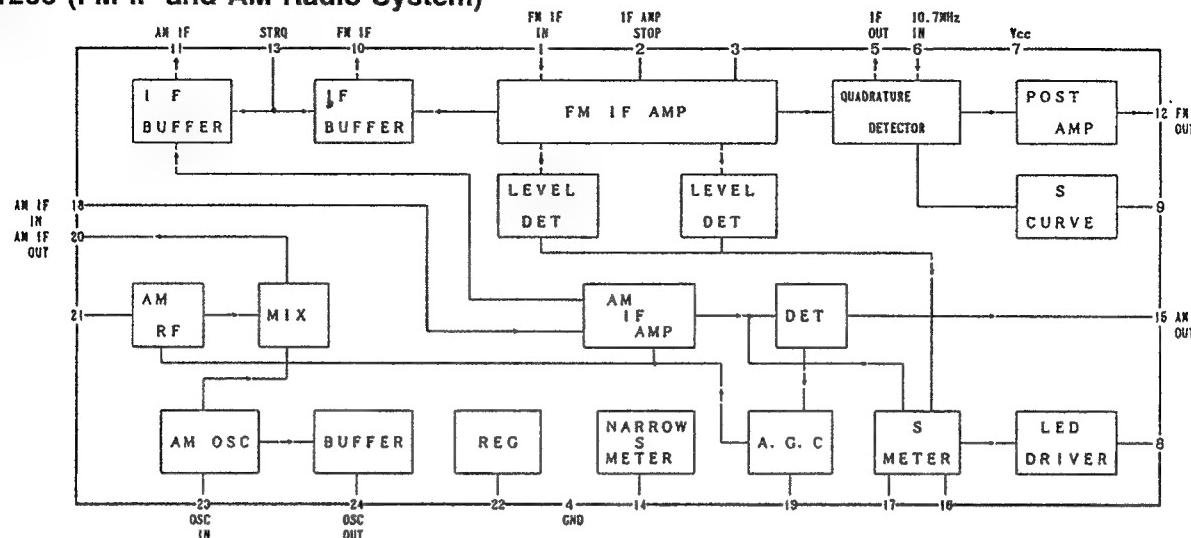
## Key Matrix

No.	24	23	22	21	
No.	K3	K2	K1	K0	
4	Sa	SLEEP	SPEAKER REMOTE	SPEAKER MAIN	POWER
3	Sb	DELAY TIME	SURROUND MODE	CENTER MODE	MR
2	Sc	TAPE-2	TAPE-1	VIDEO-2	VIDEO-1
1	Sd	CD	PHONO	AM	FM
63	Se		S.DIRECT	SIM	REC OUT
62	Sf	4	3	2	1
61	Sg	8	7	6	5
60	Sh	CLASS SCAN	D.TUNING	0	9
59	Sj	UP	DOWN	MEMORY	MUTE/MODE
58	Sk	CLASS-D	CLASS-C	CLASS-B	CLASS-A
55	Sm	CENTER OFF	SELECTIVE TONE	CLASS-F	CLASS-E

# IC BLOCK DIAGRAMS AND DESCRIPTIONS

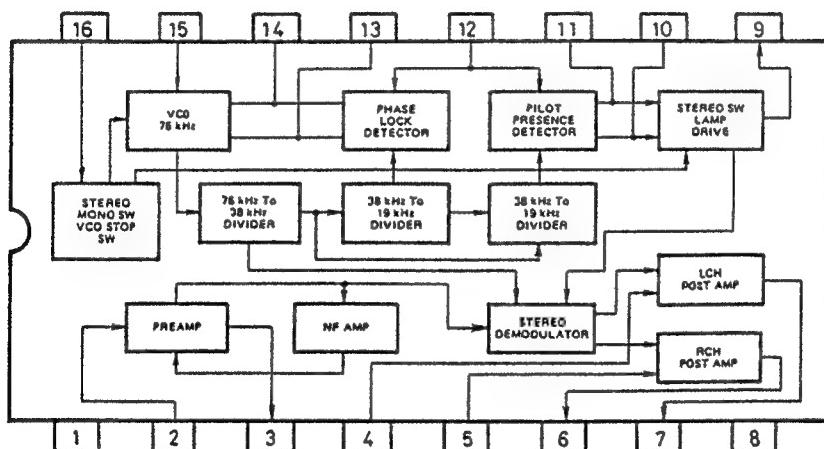
Q104

LA1266 (FM IF and AM Radio System)



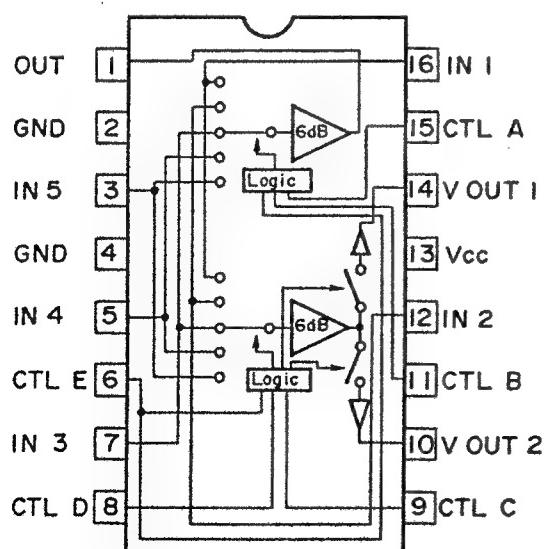
Q201

AN7470 (FM Stereo Decoder)



Q251

BA7625 (Video Selector Switch)



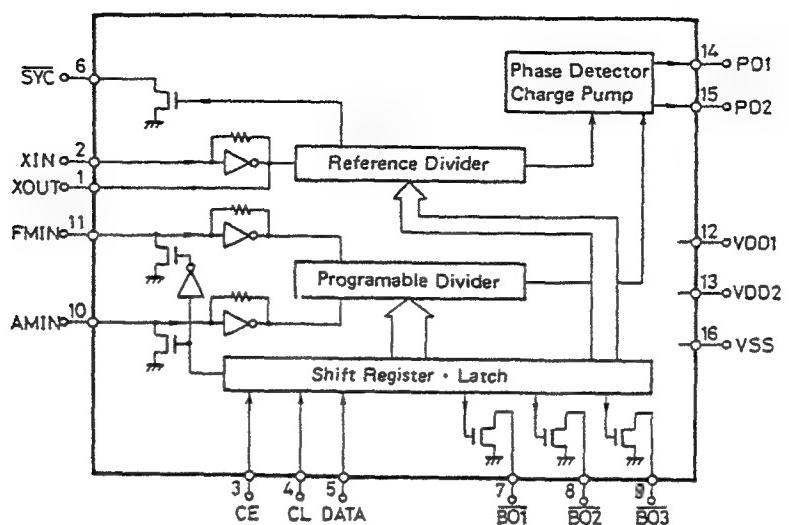
#15	#11	#6	#1
A	B	E	MONITOR OUT
L	L	X	IN1
H	L	X	IN2
L	H	X	IN3
H	H	L	IN4
H	H	H	IN5

X:Don't care

#9	#8	#6	#14
C	D	E	VOUT1
L	L	X	
H	L	X	IN2
L	H	X	IN3
H	H	L	IN4
H	H	H	IN5

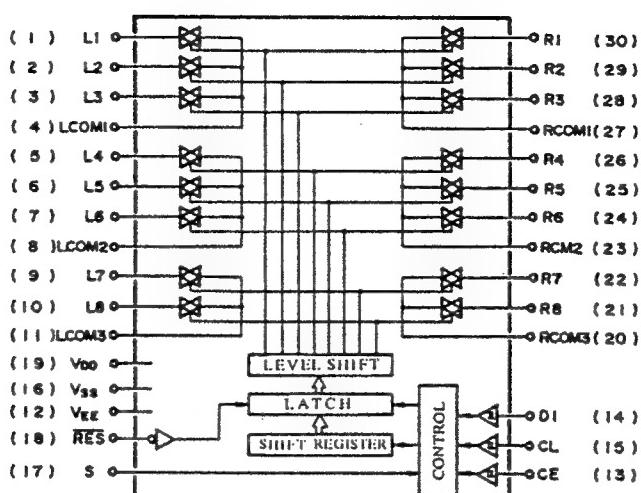
#15	#11	#6	#10
A	B	E	VOUT2
L	L	X	IN1
H	L	X	
L	H	X	IN3
H	H	L	IN4
H	H	H	IN5

**Q107**  
**LM7001 (PLL Synthesizer and Controller)**



Pin No.	Terminal	Description
1	XOUT	Connect to the 7.2 MHz crystal oscillator.
2	XIN	
3	CE	Chip enable terminal. Connect to the PLL terminal of microprocessor.
4	CL	Serial clock input terminal. Connect to the CLOCK terminal of microprocessor.
5	DATA	Serial data input terminal. Connect to the DATA terminal of microprocessor.
6	SYN	Not used.
7	AUTOMONO	AUTO/MONO selection output terminal. "L" when AUTO.
8	FM	FM band control output terminal. "L" when FM.
9	AM	AM band control output terminal. "L" when AM.
10	AMIN	AM local oscillator input terminal.
11	FMIN	FM local oscillator terminal.
12	VDD 1	Power supply terminal for back-up.
13	VDD 2	Power supply terminal.
14	PD1	Charge pump output of the phase detector which constitutes the PLL. High level is output when the divided local oscillator frequency is high than the reference frequency.
15	PD2	In the opposite case, low level is output. Floating occurs when the frequencies matched. The output is applied to the variable capacitor diode in the local oscillator through the low pass filters.
16	Vss	Ground terminal.

**Q307, Q692**  
**LC7822N (Analogue switch)**

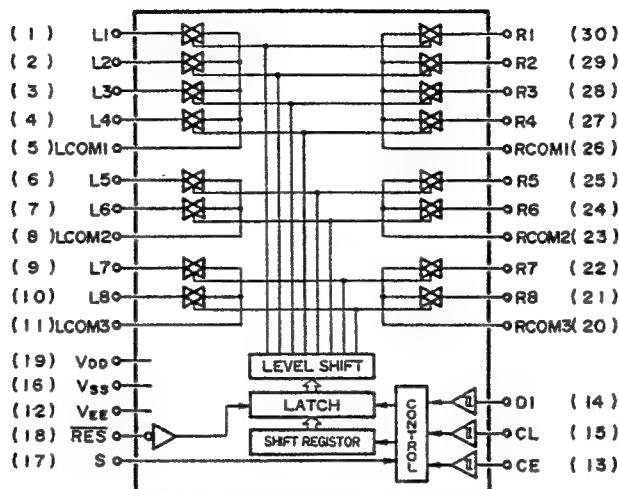
**Q307**

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	PHONO'		16	Vss	Ground terminal.
2	CD'		17	S	Selector terminal
3	TAPE-1		18	RES	Reset terminal. When power is turned on, the condition of the analog switch is not determined, but when this terminal is "L", all analog switches are off.
4	L COM 1	Input/output terminals of audio signal of left channel.	19	VDD	Power supply terminal.(+15V)
5	TAPE-1		20	R COM 3	
6	CD	Control to the inside analogue switch at the serial data.	21	TAPE-2	
7	PHONO		22	SOURCE	
8	L COM 2		23	R COM 2	Input/output terminals of audio signal of right channel.
9	SOURCE		24	PHONO	
10	TAPE-2		25	CD	Control to the inside analogue switch at the serial data.
11	L COM 3		26	TAPE-1	
12	Vss	Negative power supply terminal. (-15V)	27	R COM 1	
13	CE	Chip enable terminal. Connect the terminal SEL of microprocessor.	28	TAPE-1'	
14	DI	Serial data input terminal. Connect the terminal DATA of microprocessor.	29	CD'	
15	CL	Serial clock input terminal. Connect the terminal CLOCK of microprocessor.	30	PHONO'	

**Q692**

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	DOLBY	Input/output terminals of audio signal of right channel when surround mode.	16	Vss	Ground terminal.
2	HALL		17	S	Selector terminal
3	SIM	Control the inside analogue switch at the serial data.	18	RES	Reset terminal. When power is turned on, the condition of the analog switch is not determined, but when this terminal is "L", all analog switches are off.
4	L COM 1		19	VDD	Power supply terminal.(+15V)
5	TEST		20	R COM 3	Input/output terminals of audio signal of right channel when mode SIM.
6	TEST B		21	SIM	
7	TEST A		22	SIM	
8	L COM 2		23	R COM 2	Dolby pro logic control signal.
9	SIM	Input/output terminals of audio signal of center channel when mode SIM.	24	TEST A	Control the inside analogue switch at the serial data.
10	SIM		25	TEST B	
11	L COM 3		26	TEST	
12	Vss	Negative power supply terminal. (-15V)	27	R COM 1	Input/output terminals of audio signal of left channel when surround mode.
13	CE	Chip enable terminal. Connect the terminal SEL of microprocessor.	28	SIM	
14	DI	Serial data input terminal. Connect the terminal DATA of microprocessor.	29	HALL	Control to the inside analogue switch at the serial data.
15	CL	Serial clock input terminal. Connect the terminal CLOCK of microprocessor.	30	DOLBY	

**Q308**  
**LC7821N (Analogue switch)**

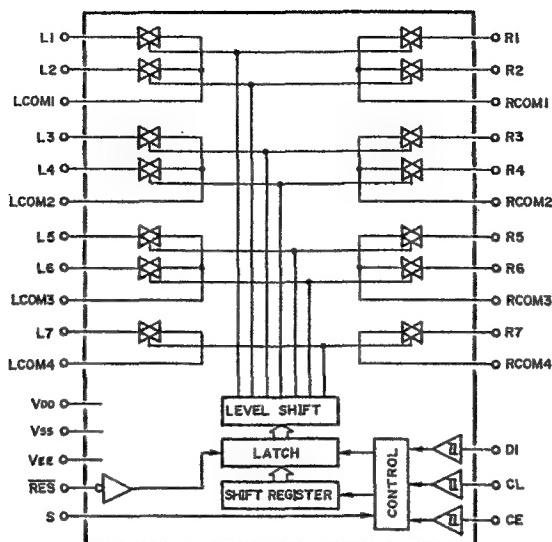
**Q308**

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	TAPE-2'		16	Vss	Ground terminal.
2	TUNER'		17	S	Selector terminal
3	VIDEO-1'		18	RES	Reset terminal. When power is turned on, the condition of the analog switch is not determined, but when this terminal is "L", all analog switches are off.
4	VIDEO-2'	Input/output terminals of audio signal of right channel.	19	VDD	Power supply terminal. (+15V)
5	L COM 1		20	L COM 3	
6	VIDEO-2	Control to the inside analogue switch at the serial data.	21	OFF	
7	VIDEO-1		22	TUNER	
8	L COM 2		23	L COM 2	Input/output terminals of audio signal of left channel.
9	TUNER		24	VIDEO-1	
10	OFF		25	VIDEO-2	Control to the inside analogue switch at the serial data.
11	L COM 3		26	L COM 1	
12	Vss	Negative power supply terminal. (-15V)	27	VIDEO-2'	
13	CE	Chip enable terminal. Connect the terminal SEL of microprocessor.	28	VIDEO-1'	
14	DI	Serial data input terminal. Connect the terminal DATA of microprocessor.	29	TUNER'	
15	CL	Serial clock input terminal. Connect the terminal CLOCK of microprocessor.	30	TAPE-2'	

## Serial Data Composition

	A0	A1	A2	A3	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
	Address				Switch change over							
Q306	0	1	0	1	TAPE-2'	TUNER'	VIDEO-1'	VIDEO-2'	VIDEO-2	VIDEO-1	TUNER	
Q307	0	0	1	1	PHONO'	CD'	TAPE-1'	TAPE-1	CD	PHONO	SOURCE	TAPE-2
Q309	0	1	1	1	TAPE-1	VIDEO-2	SIM	SIM	DIRECT		DIRECT	
Q691	1	1	1	1	DOLBY	DOLBY	DOLBY	HALL	NORMAL	WIDE	CENTER OFF	
Q692	1	0	1	1	DOLBY	HALL	SIM	TEST	TESTA	TESTB	SIM	TX-7840

**Q309, Q691**  
**LC7823N (Analogue switch)**

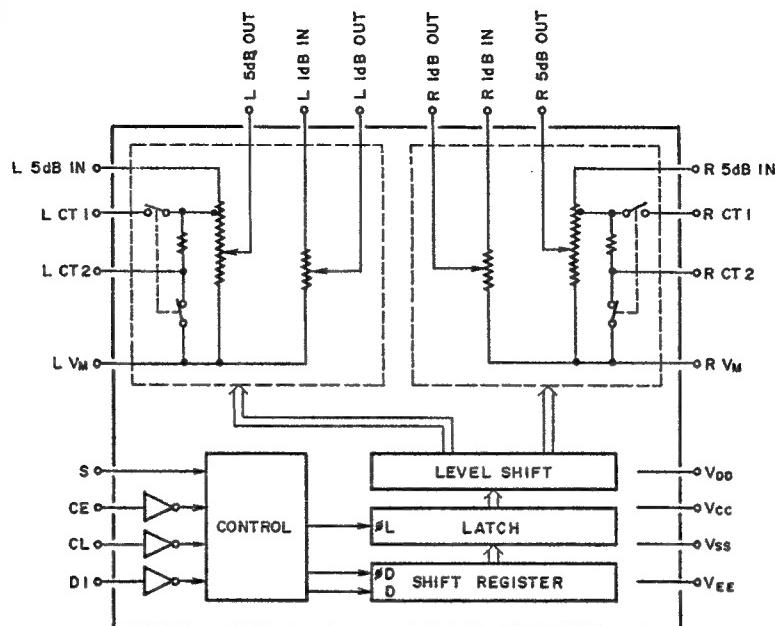
**Q309**

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	TAPE-1 REC	Recording output terminals. Control the analogue switch at the serial data.	16	Vss	Ground terminal.
2	VIDEO-2 OUT		17	S	Selector terminal
3	L COM 1		18	RES	Reset terminal. When power is turned on, the condition of the analog switch is not determined, but when this terminal is "L", all analog switches are off.
4	SIM		19	VDD	Power supply terminal. (+15V)
5	SIM		20	R COM 4	
6	L COM 2	Input/output terminals of audio signal of left channel when surround mode.	21	RIRECT	
7	DIRECT	Control the inside analogue switch at the serial data.	22	R COM 3	
8	NC		23	NC	Input/output terminals of audio signal of right channel when surround mode.
9	L COM 3		24	DIRECT	Control to the inside analogue switch at the serial data.
10	DIRECT		25	R COM 2	
11	L COM 4		26	SIM	
12	Vss	Negative power supply terminal. (-15V)	27	SIM	
13	CE	Chip enable terminal. Connect the terminal SEL of microprocessor.	28	R COM 1	Recording output terminals. Control the analogue switch at the serial data.
14	DI	Serial data input terminal. Connect the terminal DATA of microprocessor.	29	VIDEO-2 OUT	
15	CL	Serial clock input terminal. Connect the terminal CLOCK of microprocessor.	30	TAPE-1 REC	

**Q691**

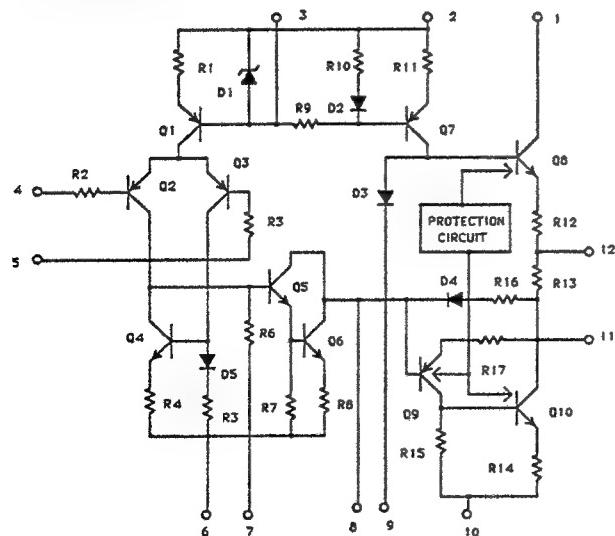
Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	DOLBY		16	Vss	Ground terminal.
2	DOLBY		17	S	Selector terminal
3	L COM 1		18	RES	Reset terminal. When power is turned on, the condition of the analog switch is not determined, but when this terminal is "L", all analog switches are off.
4	DOLBY		19	VDD	Power supply terminal. (+15V)
5	HALL		20	R COM 4	
6	L COM 2	Input/output terminals of audio signal of left channel when surround mode.	21	C. OFF	
7	NORMAL	Control the inside analogue switch at the serial data.	22	R COM 3	
8	WIDE		23	WIDE	Input/output terminals of audio signal of right channel when surround mode.
9	L COM 3		24	NORMAL	Control to the inside analogue switch at the serial data.
10	C. OFF		25	R COM 2	
11	L COM 4		26	HALL	
12	Vss	Negative power supply terminal. (-15V)	27	DOLBY	
13	CE	Chip enable terminal. Connect the terminal SEL of microprocessor.	28	R COM 1	
14	DI	Serial data input terminal. Connect the terminal DATA of microprocessor.	29	DOLBY	
15	CL	Serial clock input terminal. Connect the terminal CLOCK of microprocessor.	30	DOLBY	

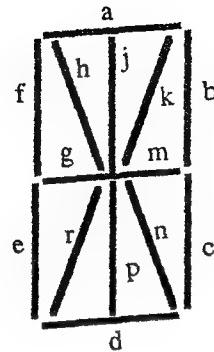
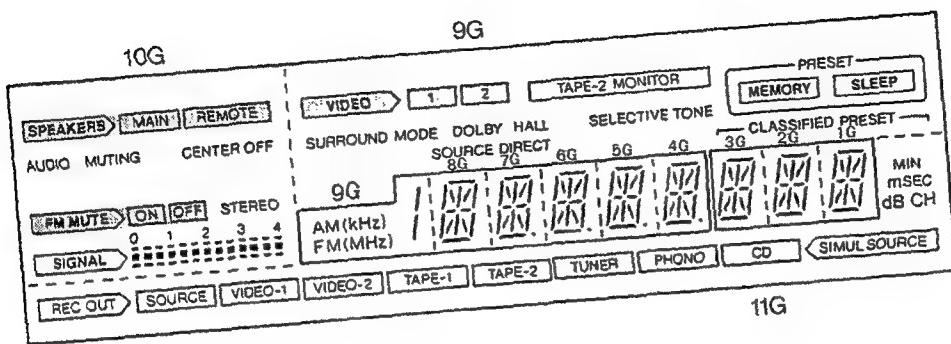
**Q451**  
**LC7536 (Electro Volume)**



No.	TERMINAL	DESCRIPTION	No.	TERMINAL	DESCRIPTION
1	L 5dB IN	5dB step attenuator input terminal	17	CL	Serial data input terminal
3	L CT1	Terminal for loudness	18	DI	Serial data input terminal
4	L CT2	Terminal for loudness	19	CE	Serial data input terminal
5	L 5dB OUT	5dB step attenuator output terminal	21	VCC	Power supply terminal
6	L 1dB IN	1dB step attenuator input terminal	22	R VM	Common terminal of volume
8	L 1dB OUT	1dB step attenuator output terminal	23	R 1dB OUT	1dB step attenuator output terminal
9	L VM	Common terminal of volume	25	R 1dB IN	1dB step attenuator input terminal
10	VEE	Power supply terminal	26	R 5dB OUT	5dB step attenuator output terminal
12	S	Select terminal of address code during data format	27	R CT2	Terminal for loudness
13	VDD	Power supply terminal	28	R CT1	Terminal for loudness
14	VSS	Power supply terminal	30	R 5dB IN	5dB step attenuator input terminal

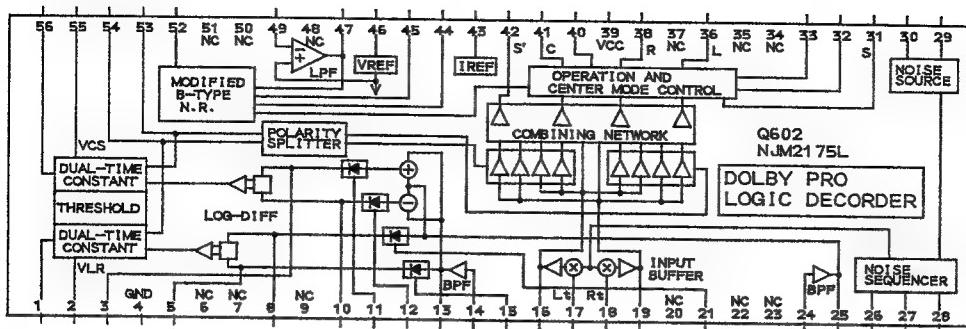
**Q501, Q502**  
 **$\mu$ PC1298V (Power Amplifier Driver)**



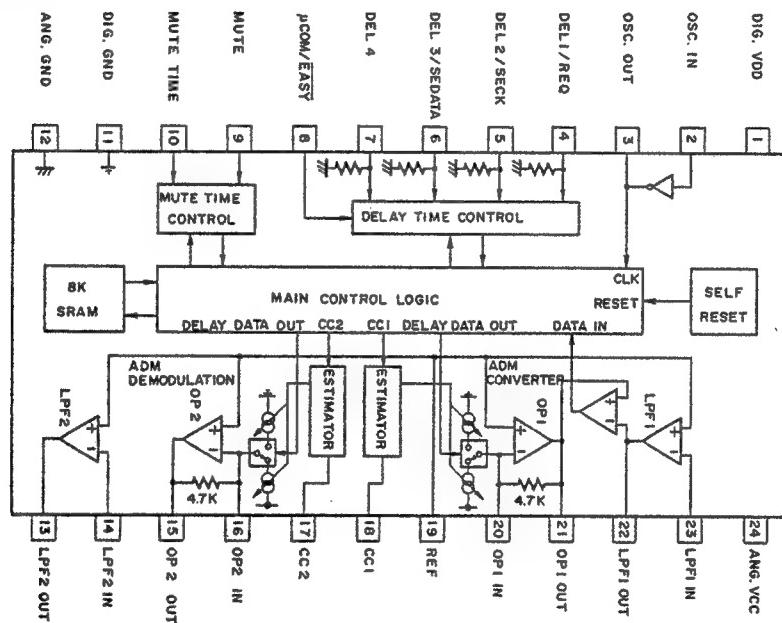
Q701  
11-BT-92GK (Fluorescent Indicator Tube)

	D11	D10	D9	D8	D7	D6	D5	D4	D3	D2	D1
Sa	MIN	SPEAKERS	VIDEO/PRESET	a	a	a	a	a	a	a	a
Sb	mSEC	MAIN	1	b	b	b	b	b	b	b	b
Sc	CH	REMOTE	2	c	c	c	c	c	c	c	c
Sd	dB	AUDIO MUTING	TAPE-2 MONITOR	d	d	d	d	d	d	d	d
Se	SIMUL SOURCE	CENTER OFF	SURROUND MODE	e	e	e	e	e	e	e	e
Sf	Frame of CD	FM MUTE	DOLBY	f	f	f	f	f	f	f	f
Sg	Frame of PHONO	ON	HALL	g	g	g	g	g	g	g	g
Sh	Frame of TUNER	OFF	SELECTIVE TONE	h	h	h	h	h	h	h	h
Sj	Frame of TAPE-2	STEREO	SOURCE DIRECT	i	i	i	i	i	i	i	i
Sk	Frame of TAPE-1	SIGNAL	MEMORY	k	k	k	k	k	k	k	k
Sm	Frame of VIDEO-2	II(LEVEL1)	SLEEP	m	m	m	m	m	m	m	m
Sn	Frame of VIDEO-1	II(LEVEL2)	CLASSIFIED PREST	n	n	n	n	n	n	n	n
So	SOURCE.....CD			.	.	.	.	.	.	.	.
Sp	Frame of SOURCE	II(LEVEL3)	AM(kHz)	p	p	p	p	p	p	p	p
Sr	REC OUT	II(LEVEL4)	FM(MHz)	r	r	r	r	r	r	r	r

**Q602  
NJM2175L (Dolby Pro Logic Decoder)**

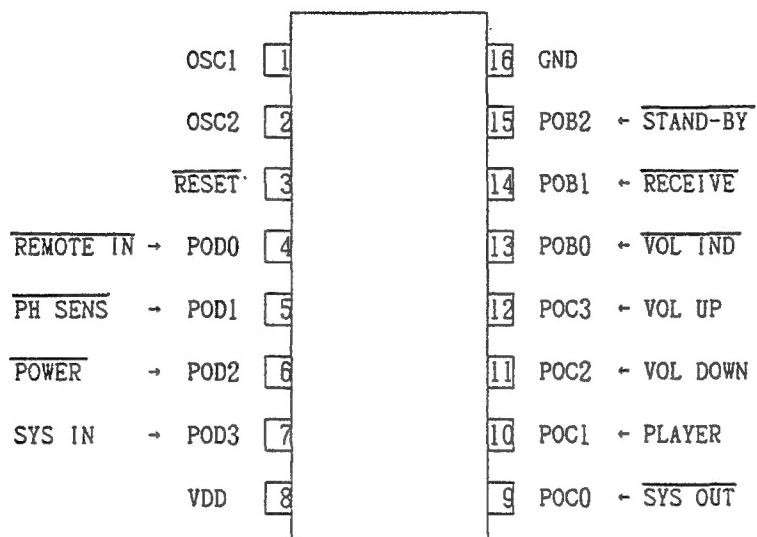
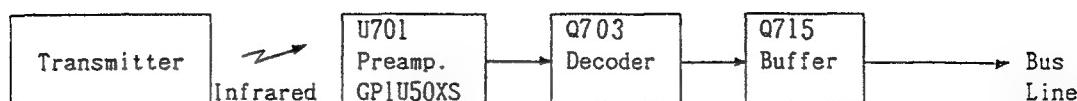


**Q661  
M50198P (Digital Delay)**



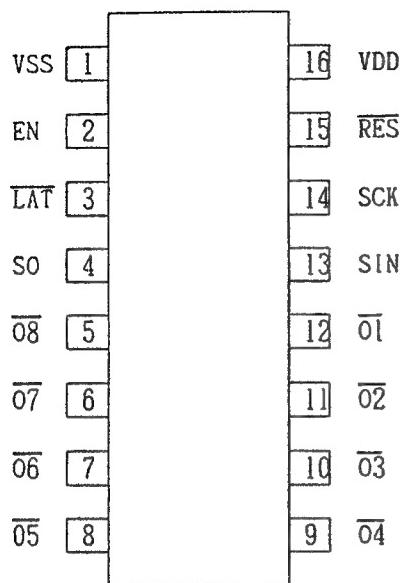
Pin no.	Symbol	Function
1	DIG GND	Power supply terminal of digital section
2	OSC. IN	Connect the 3.27MHz ceramic oscillator or external clock.
3	OSC. OUT	
4	DELI/REQ	Terminal DEL1 when the easy mode. Terminal REQ when the microprocessor.
5	DEL2/SECK	Terminal DEL2 when the easy mode. Terminal SECK when the microprocessor.
6	DEL3/SEDATA	Terminal DEL3 when the easy mode. Terminal SEDATA when the microprocessor.
7	DELA	80usec. mode control terminal.
8	COM/EASY	Microprocessor or easy mode changeover terminal
9	MUTE	Manual muting control terminal.
10	MUTE TIME	Auto muting time changeover terminal.
11	DIG.GND	Digital ground
12	ANG.GND	Analog ground
13	LPP2 OUT	Connect the secondary low pass filter between pins 13 & 14.
14	LPP2 IN	
15	OP2 OUT	Operation amplifier output terminal
16	OP2 IN	Operation amplifier input terminal
17	CC2	Current control
18	CC1	Current control
19	REF	Reference voltage.(2.5V)
20	OP1 IN	Operation amplifier input terminal
21	OP1 OUT	Operation amplifier output terminal
22	LPP1 OUT	Connect the low pass filter between pins 22 and 23.
23	LPP1 IN	
24	ANG.VCC	Power supply terminal of analog section.

**Q703**  
 **$\mu$ PD17103CX-531 (Remote Control Decoder)**

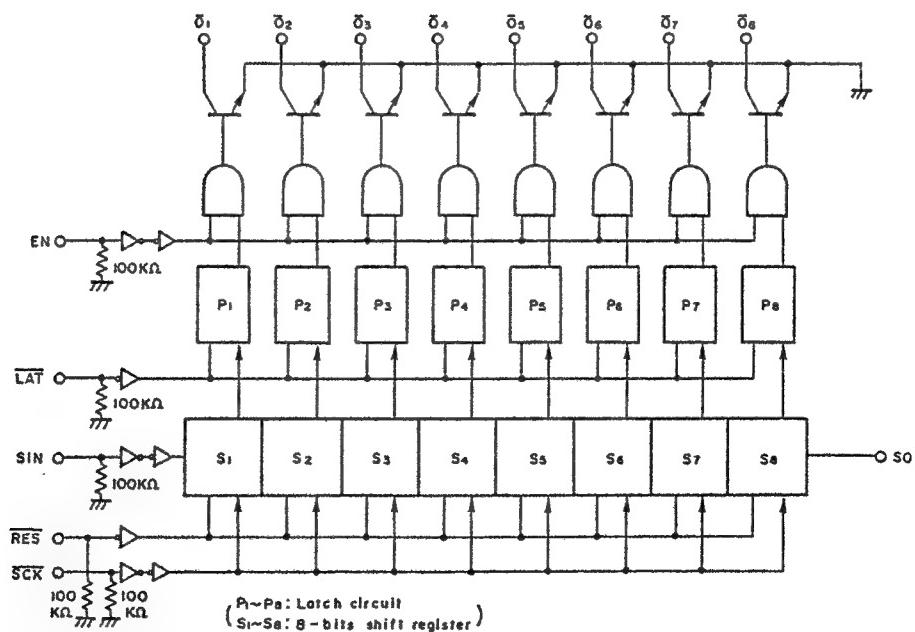


Pin No.	Symbol	Terminal	Description
1	OSC1	OSC	Connect to the 8.00MHz ceramic oscillator.
2	OSC2		
3	RES	RESET	System reset terminal. Active low.
4	POD0	REMOTE IN	Signal input terminal from preamp. for remote control. Active low.
5	POD1	PHONO SENES	Phono detection input terminal. Active low.
6	POD2	POWER	Stand-by detection input terminal. During low input, only the POWER code is decoded.
7	POD3	SYS IN	System code input terminal.
8	V <sub>DD</sub>	+B	Power supply terminal.
9	POC0	SYS OUT	Output at this terminal are the custom code (16bits) remote control code input to REMOTE IN, data code (8bits), and the serial code (12bits) that has been converted corresponding to the decoded data code (8bits)
10	POC1	PLAYER	When the player PLAY/REEJECT is input, a high pulse of 200ms is output.
11	POC2	VOL DOWN	When the volume DOWN code is input, a high pulse of 120ms is output.
12	POC3	VOL UP	When the volume UP code is input, a high pulse of 120ms is output.
13	POB0	VOL IND	During the output of VOLUME UP/DOWN, a pulse (T T T T = 250ms) is output. (Not used.)
14	POB1	RECEIVE	This is the display output for remote control reception. Output is low when decoded code is being received.
15	POB2	STAND-BY	STAND-BY indication terminal.
16	V <sub>ss</sub>	GND	Ground terminal.

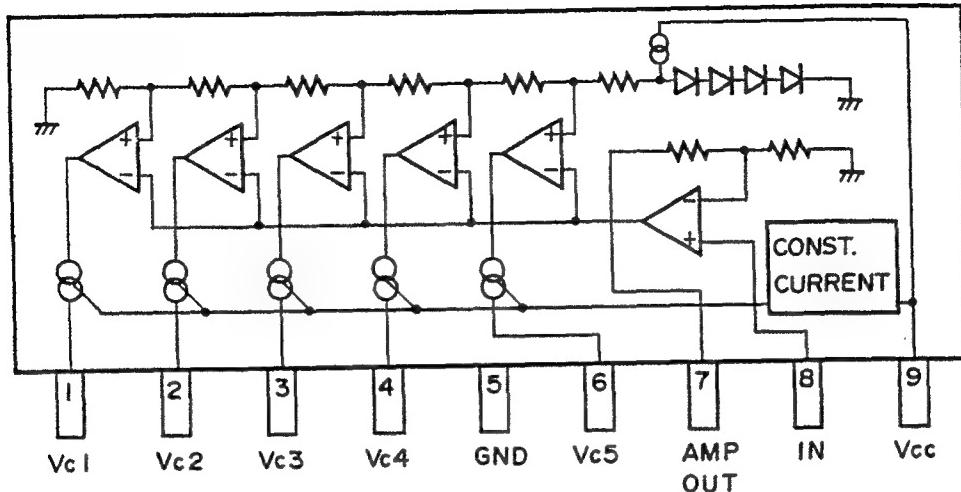
**Q705, Q851**  
 **$\mu$ PD6345C (Extended IC)**



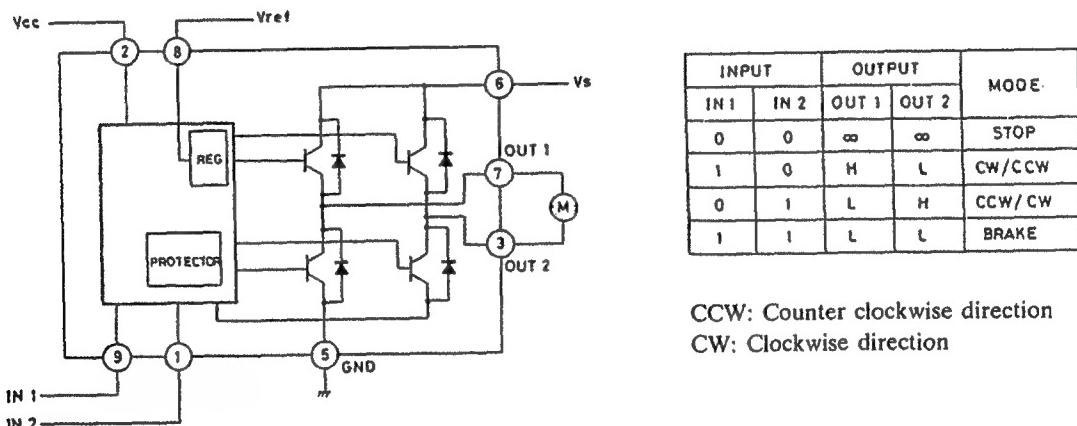
Pin No.	Symbol	Q705 Description	Q851 Description
1	Vss	Ground terminal.	
2	EN	Chip enable input terminal. Connect to the terminal EN of the microprocessor. Active H.	
3	LAT	Latch input terminal. Connect to the terminal LAT of the microprocessor.	
4	SO	Serial data output terminal.	
5	O8	NR OFF indicator output terminal. Active low.	Headphone relay control output terminal. Active low.
6	O7	NR ON indicator output terminal. Active low.	Rear speaker relay control output terminal. Active low.
7	O6	HB OFF indicator output terminal. Active low.	Remote speaker relay control output terminal. Active low.
8	O5	HB ON indicator output terminal. Active low.	Main speaker relay control output terminal. Active low.
9	O4	LOCAL indicator output terminal. Active low.	Center preout muting control output terminal. Active low.
10	O3	DX indicator output terminal. Active low.	Not used.
11	O2	AUTO indicator output terminal. Active low.	Video selector switch control output terminal.
12	O1	MONO indicator output terminal. Active low.	Video selector switch control output terminal.
13	SIN	Serial data input terminal. Connect to the terminal DATA of the microprocessor.	
14	SCK	Serial clock input terminal. Connect to the terminal CLOCK of the microprocessor.	
15	RESET	Reset input terminal. Active L.	
16	VDD	Power supply terminal.	



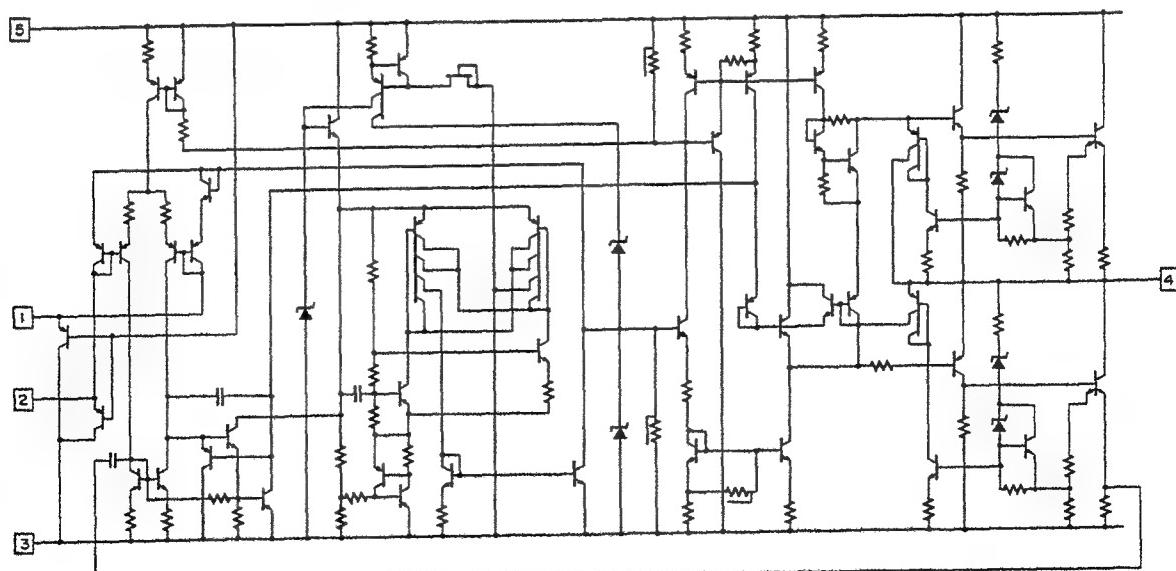
**Q706**  
**BA6125 (Signal meter driver)**



**Q871**  
**TA7291S (Volume driver)**



**Q571, Q572**  
**SI-18751 (Power amplifier)**



## ADJUSTMENT PROCEDURES

- Preparation

- Input

FM mono: 1kHz, 75kHz devi., 60dB/ $\mu$ V  
 FM stereo: 1kHz, 75kHz devi., 60dB/ $\mu$ V  
 Pilot signal 19kHz 7.5kHz devi.

AM: 400Hz 30% mod.

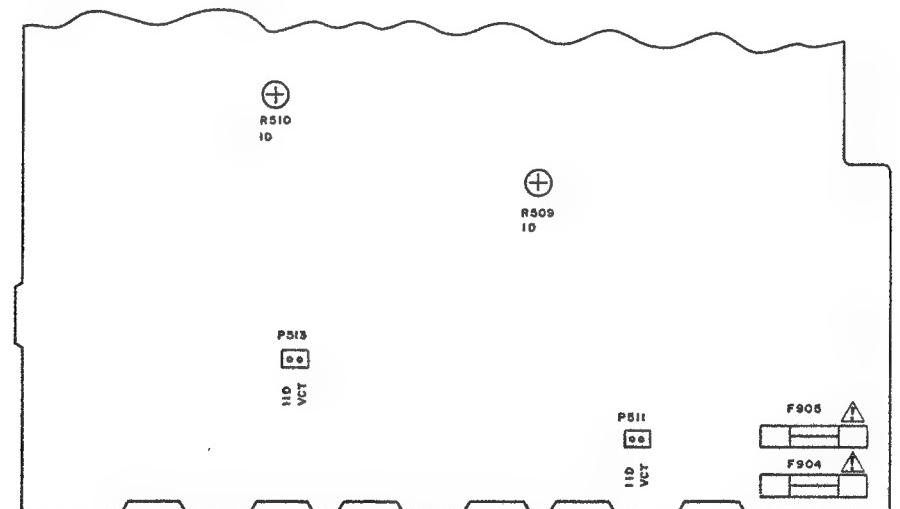
- Outputs

Connect the non-inductive type resistors of 8ohms to the main speaker, remote speaker, and rear speaker terminals unless otherwise noted.

- Standard Knob Position

TAPE MONITOR 2 .....	OFF
VOLUME.....	Maximum
BASS/TREBLE/BALANCE/INPUT	
BALANCE.....	Center
MUTING.....	OFF
REC SELECTOR.....	SOURCE
INPUT SELECTOR.....	CD
SPEAKERS .....	ON
S.T.C.....	OFF

SURROUND MODE.....	OFF
CENTER MODE.....	WIDE
DELAY TIME.....	20mS
SIM/REAR LEVEL.....	Center



SELECTOR AND POWER AMPLIFIER PC BOARD

### Amplifier section

#### Idling Current Adjustment

Connect the DC voltmeter to the terminals IID and VCT on the pre.,and main amplifier pc board. Adjust the semi-fixed resistors R509, and R510 so that indication of voltmeter is  $5 \pm 0.5$ mV.

NOTE:Adjust after switching on for 5 minutes.

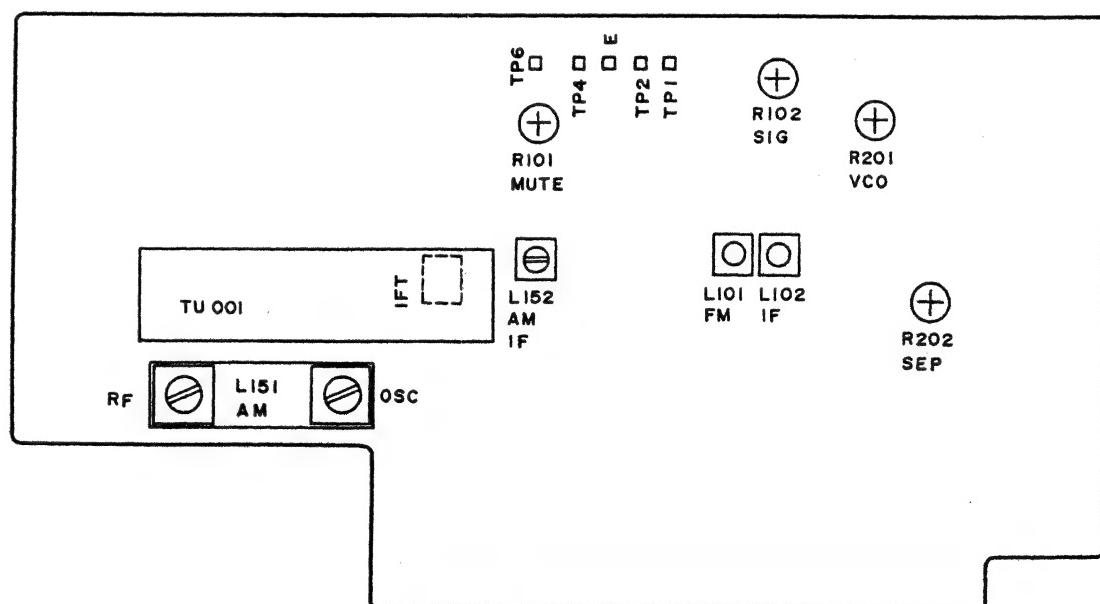
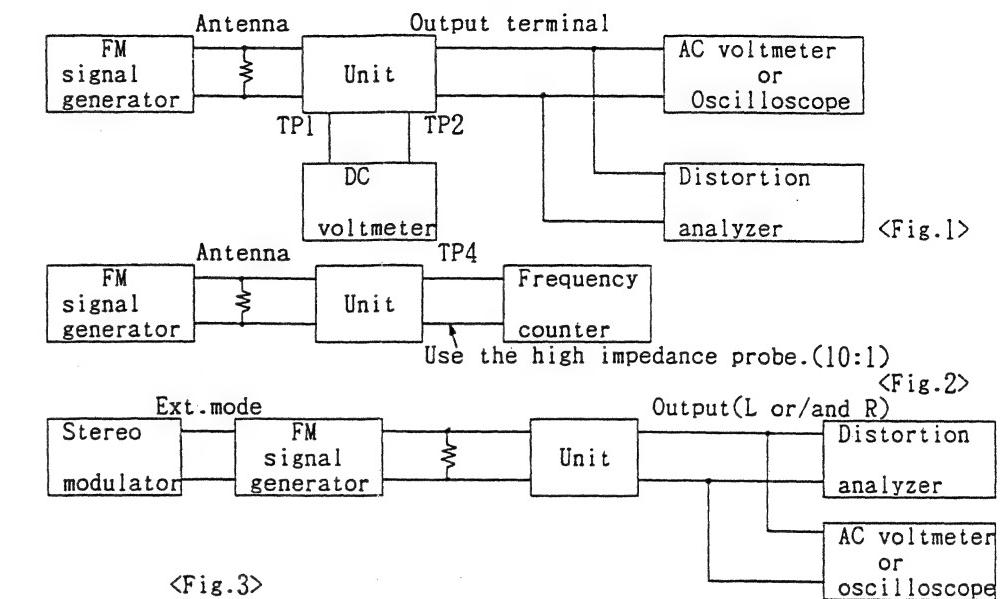
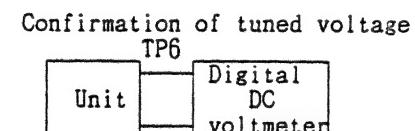
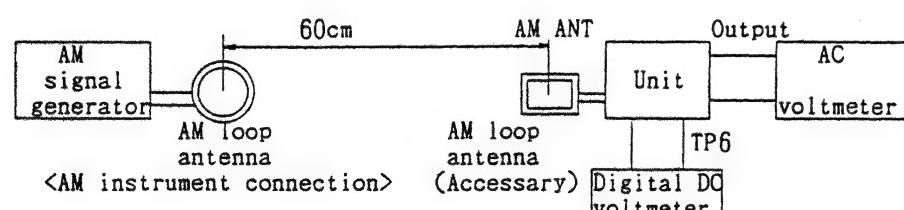
**FM section**

Item	Step	Connection of instrument	FM SG output	Stereo modulator output	Tuning frequency	Output indicator	Adjustment point	Adjust for	Remarks
FM IF/RF	1	Fig. 1	99.1MHz 1kHz, 75kHz devi. 65dBf (60dB)	99.1MHz	99.1MHz	DC voltmeter	L101	0±20mV	FM MUTE/MODE switch: ON/STEREO Repeat the steps 1 and 3 until no further adjustment is necessary.
	2					AC voltmeter	IPT on the front end	Maximum	
	3					Distortion analyzer	L102	Minimum	
VCO		Fig. 2	99.1MHz 1kHz, 75kHz devi. 65dBf (60dB)		99.1MHz	Frequency counter	R201	19kHz±10Hz	
Stereo Distortion		Fig. 3	99.1MHz, Ext mod., 65dBf (60dB)	Channel L or R 1kHz	99.1MHz	Distortion analyzer	IPT on the front end	Minimum	Don't turn more than ±180°
Stereo Separation	1	Fig. 3	99.1MHz Ext. modulation 65dBf (60dB)	Channel L 1kHz	99.1MHz	Channel R AC voltmeter	R202	Minimum	Maximum and same separation.
	2			Channel R 1kHz		Channel L AC voltmeter		Minimum	
Muting Level		Fig. 3	99.1MHz 19.2dBf (14dB)		99.1MHz	AUTO indicator	R101	Light on	
Signal Level		Fig. 3	99.1MHz 33dBf (28dB)		99.1MHz	4th Signal indicator	R102	Light on	

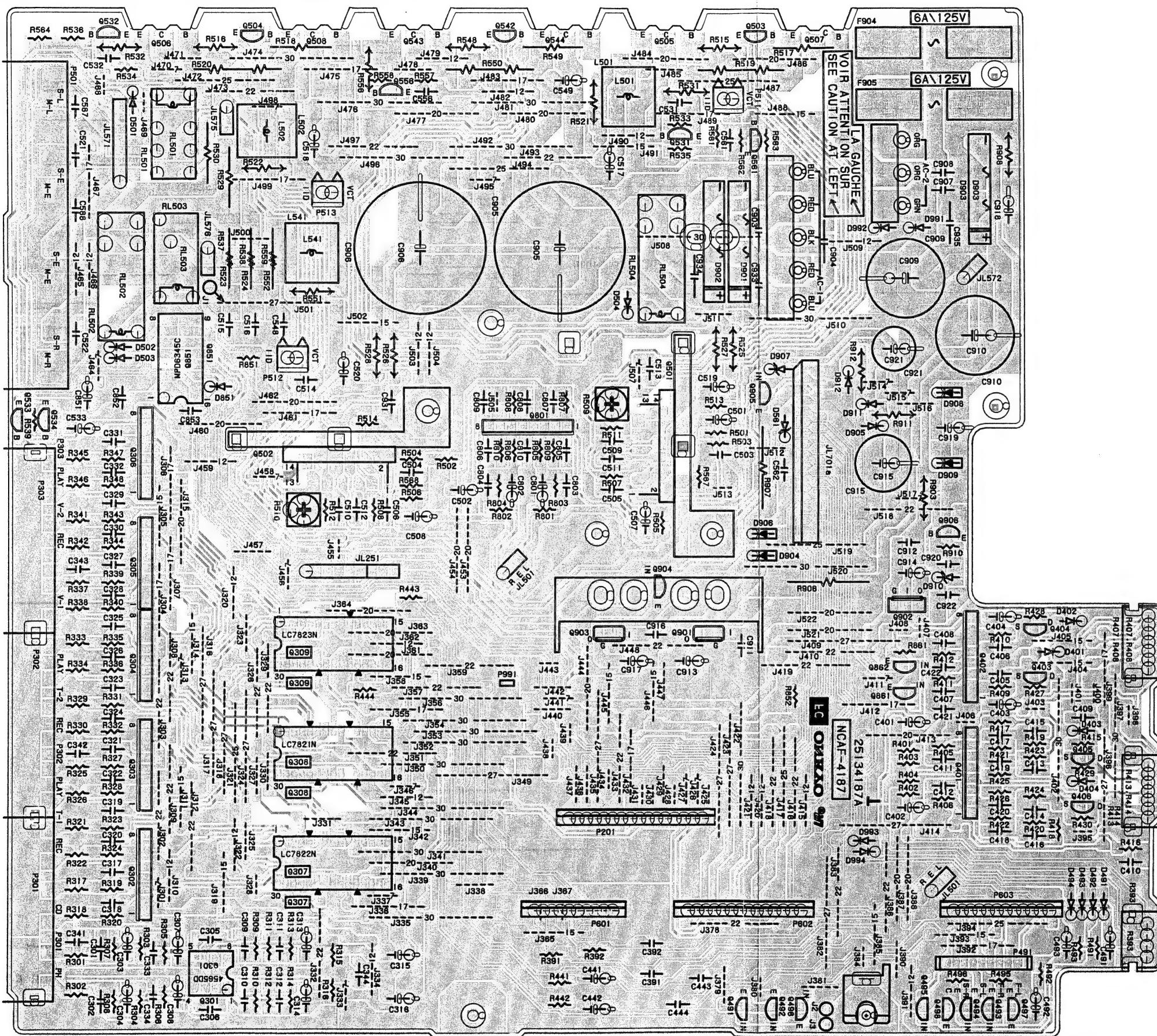
**AM section**

Step	AM SG output	Tuning frequency	Output indicator	Adjustment point	Adjust for
1		522kHz	Digital DC voltmeter	OSC coil on RF block L151	1.2±0.1V (1.3±0.1V)
2	603kHz 400Hz, 30% mod. 60dB/m	603kHz	AC voltmeter	RF coil on RF block L151	Maximum
3	990kHz 400Hz, 30% mod. 60dB/m	990kHz	AC voltmeter	L152	Maximum

Reference Specifications  
 FM tuned voltage: 87.5MHz – 108.00MHz  
 $1.6 \pm 0.4V - 8.0 \pm 0.4V$   
 AM tuned voltage: 522kHz  $1.3 \pm 0.4V$   
 $1611kHz 7.5 \pm 0.4V$   
 Auto stop level: AM: Less than 65dB/m  
 FM: Less than 16dB/ $\mu$

**Tuner circuit pc board**

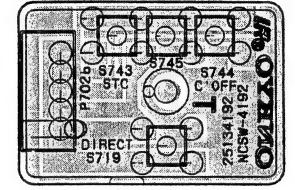
## **PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE**



## **SELECTOR AND POWER AMPLIFIER PC BOARD**



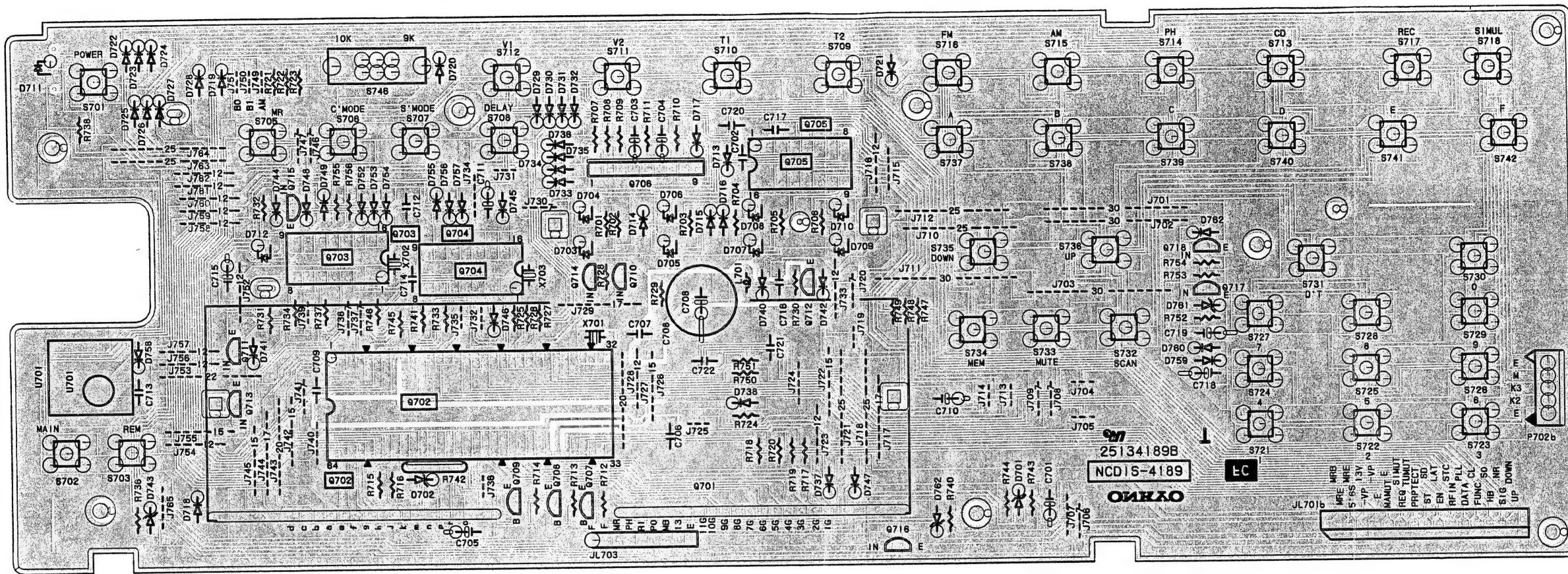
## **HEADPHONE TERMINAL PC BOARD**



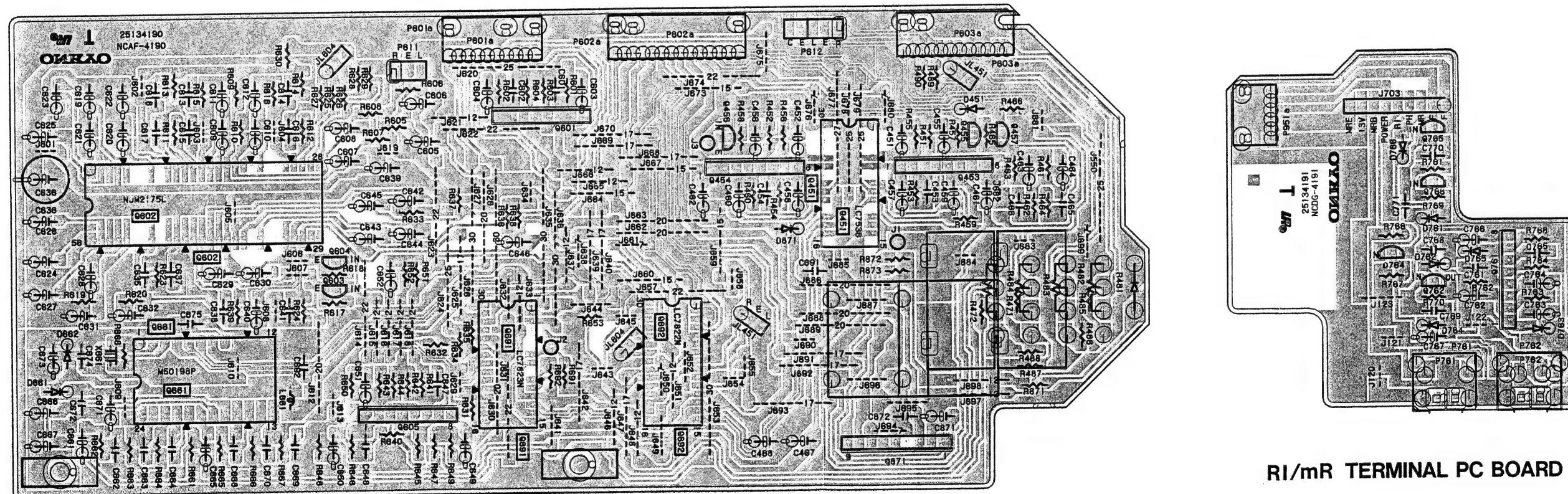
## **OPERATION SWITCH PC BOARD**



## **INPUT BALANCE VOLUME PC BOARD**

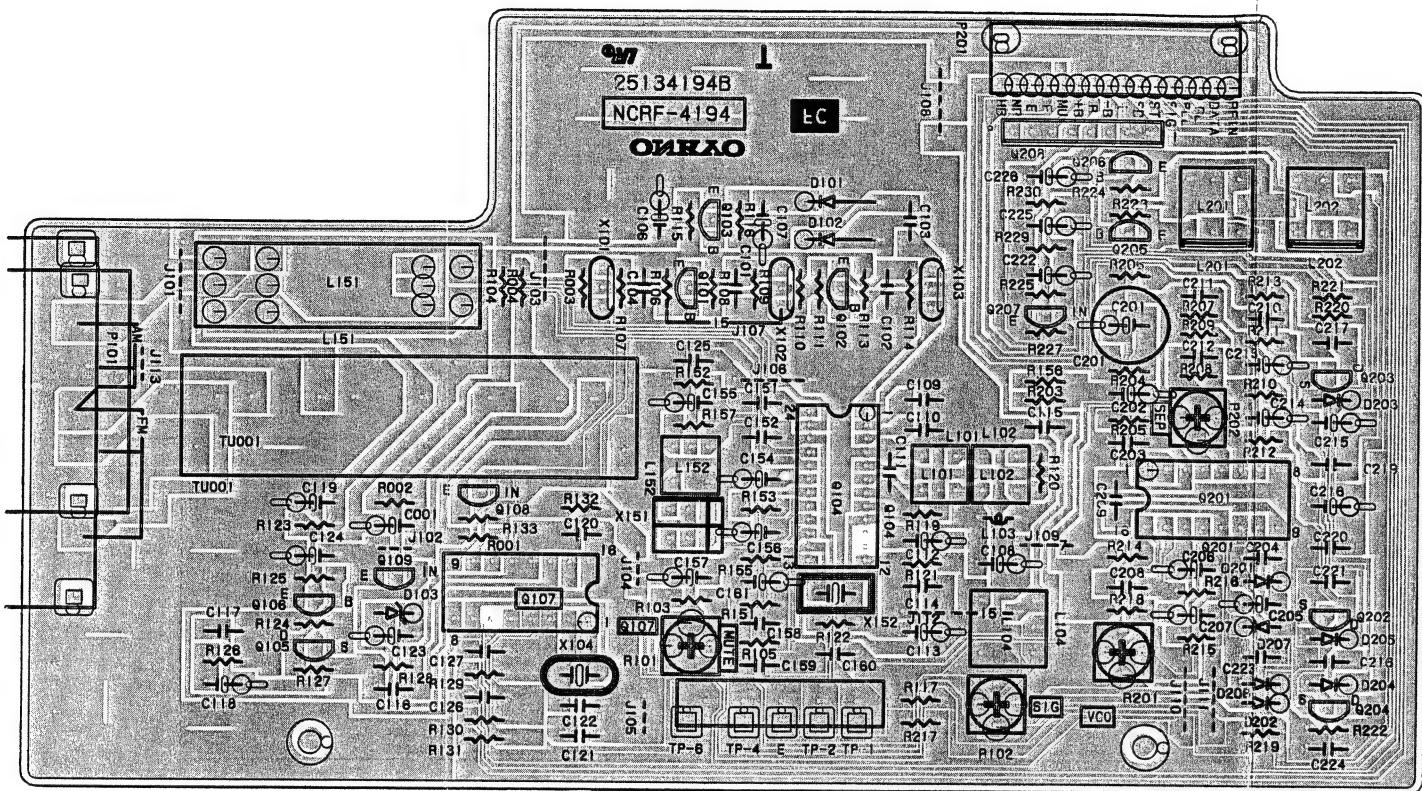


## **DISPLAY CIRCUIT PC BOARD**

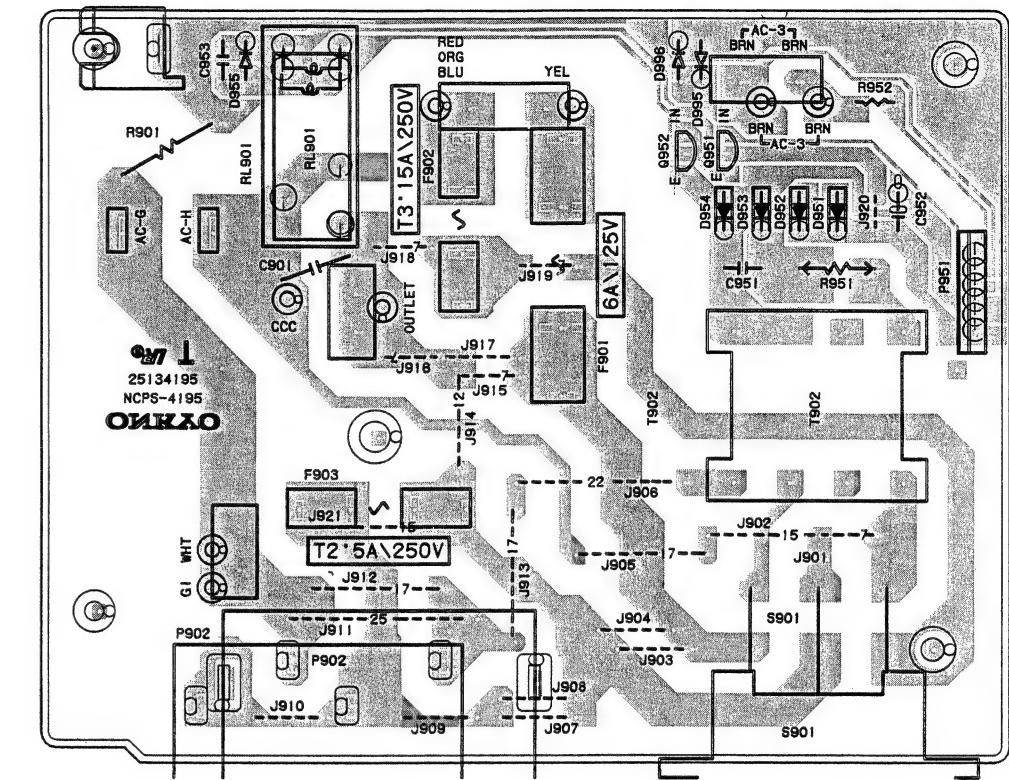


#### **VOLUME AND SURROUND CIRCUIT PC BOARD**

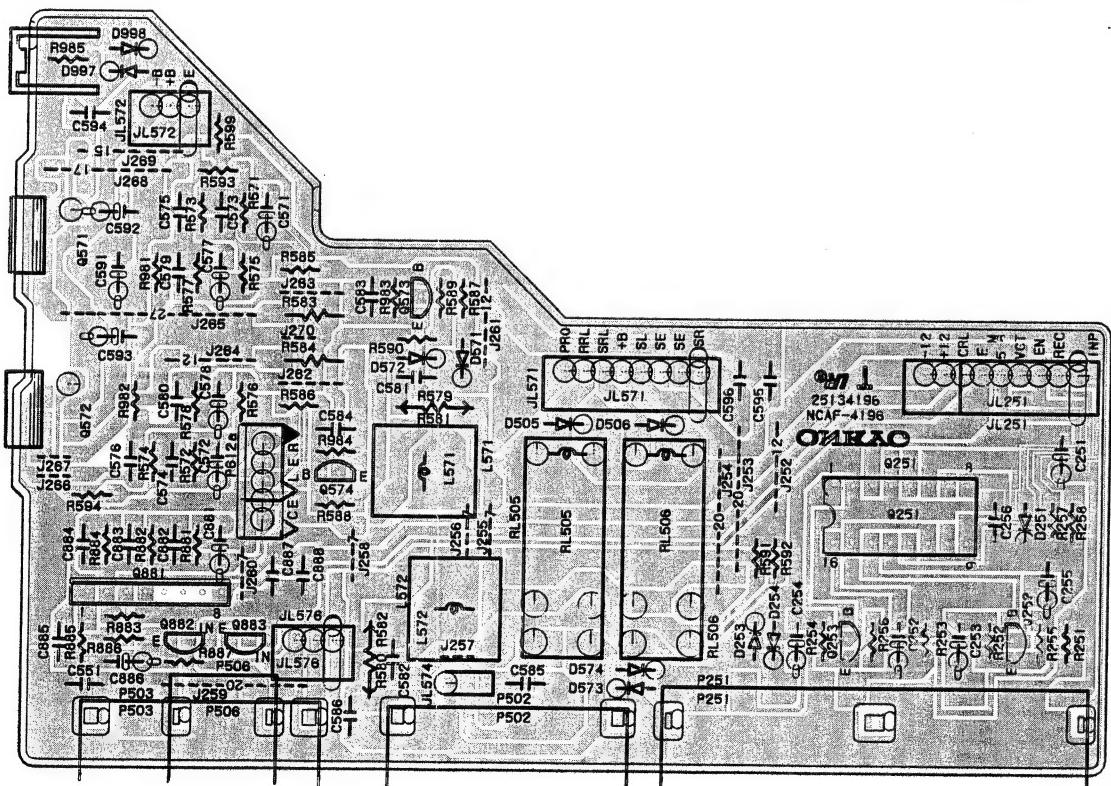
## PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE



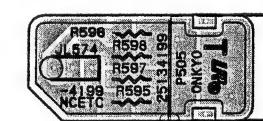
TUNER CIRCUIT PC BOARD



POWER SUPPLY CIRCUIT PC BOARD



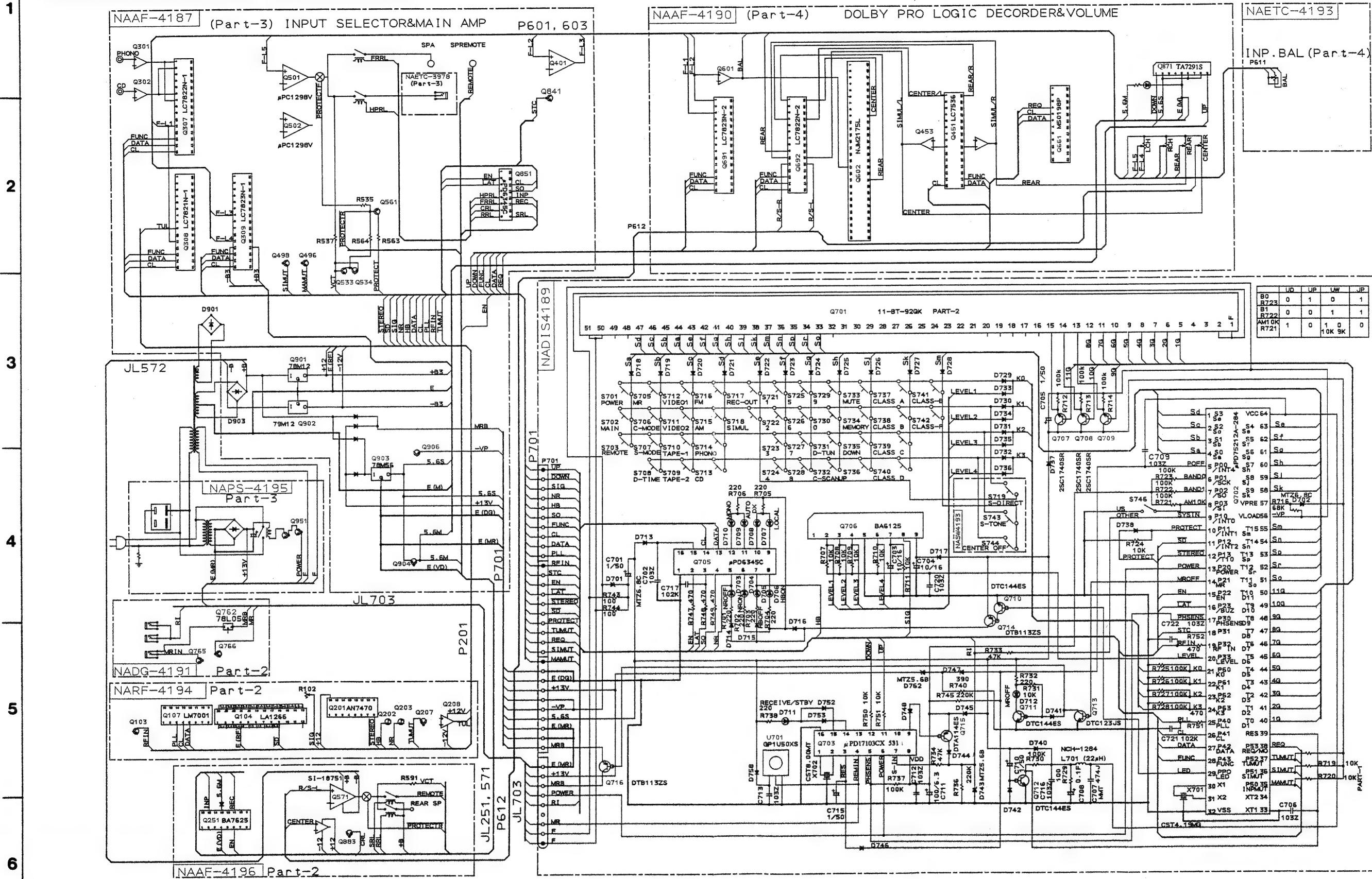
VIDEO AND REAR AMPLIFIER PC BOARD



REAR PRE. OUT PC BOARD

A      B      C      D      E      F      G      H

**SCHEMATIC DIAGRAM**  
**MODEL TX-7840**  
**CONNECTION DIAGRAM OF MICROPROCESSOR**



A

B

C

D

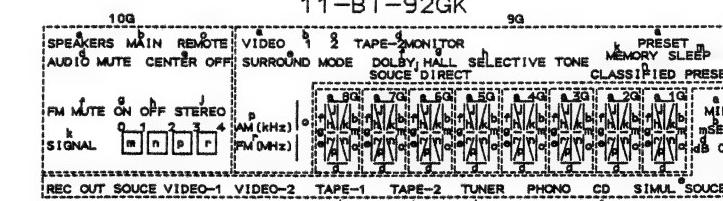
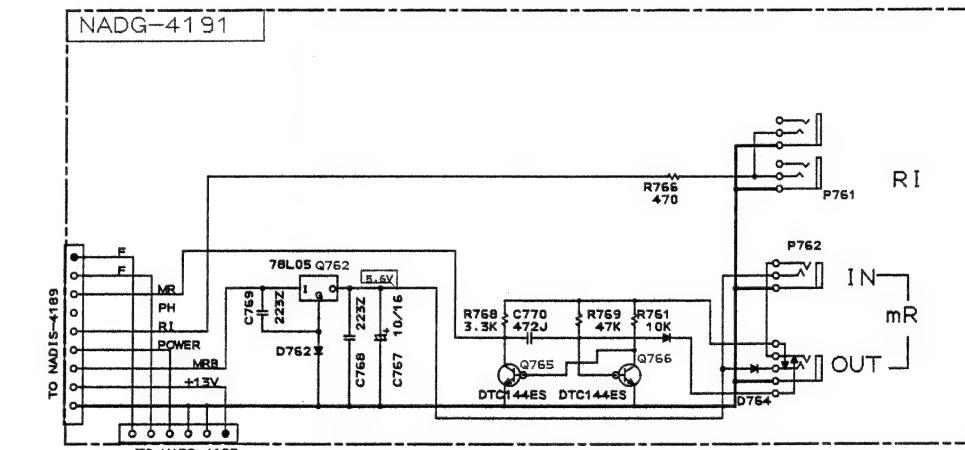
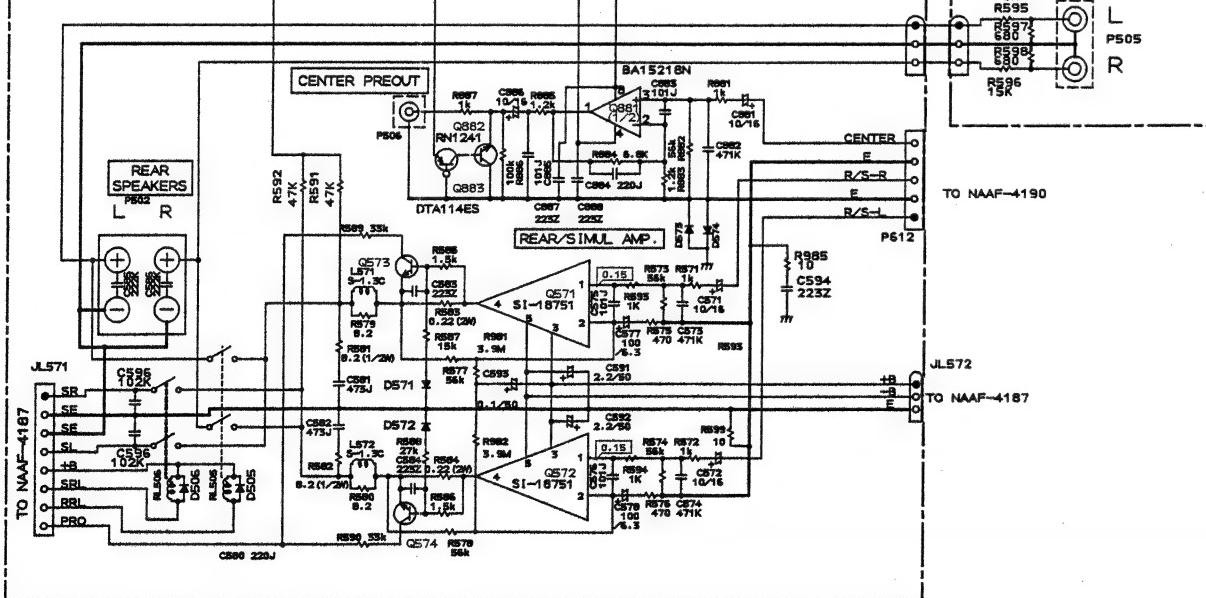
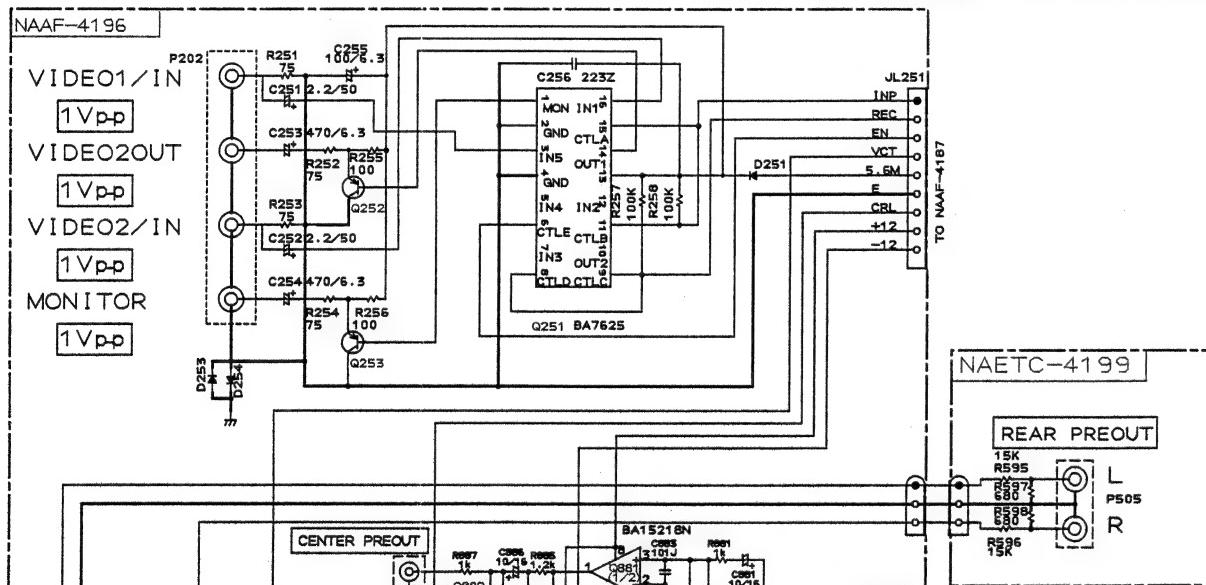
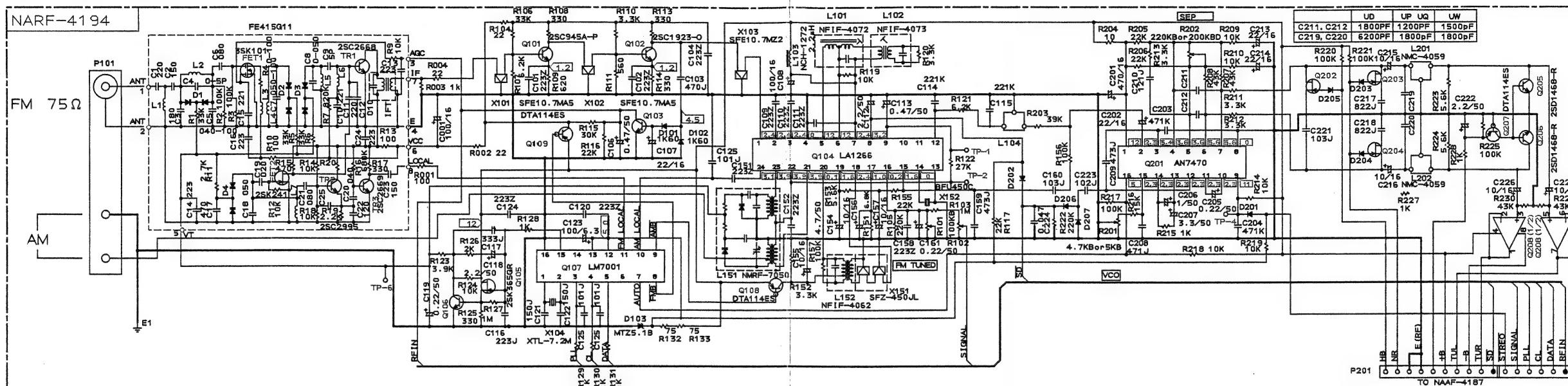
E

F

G

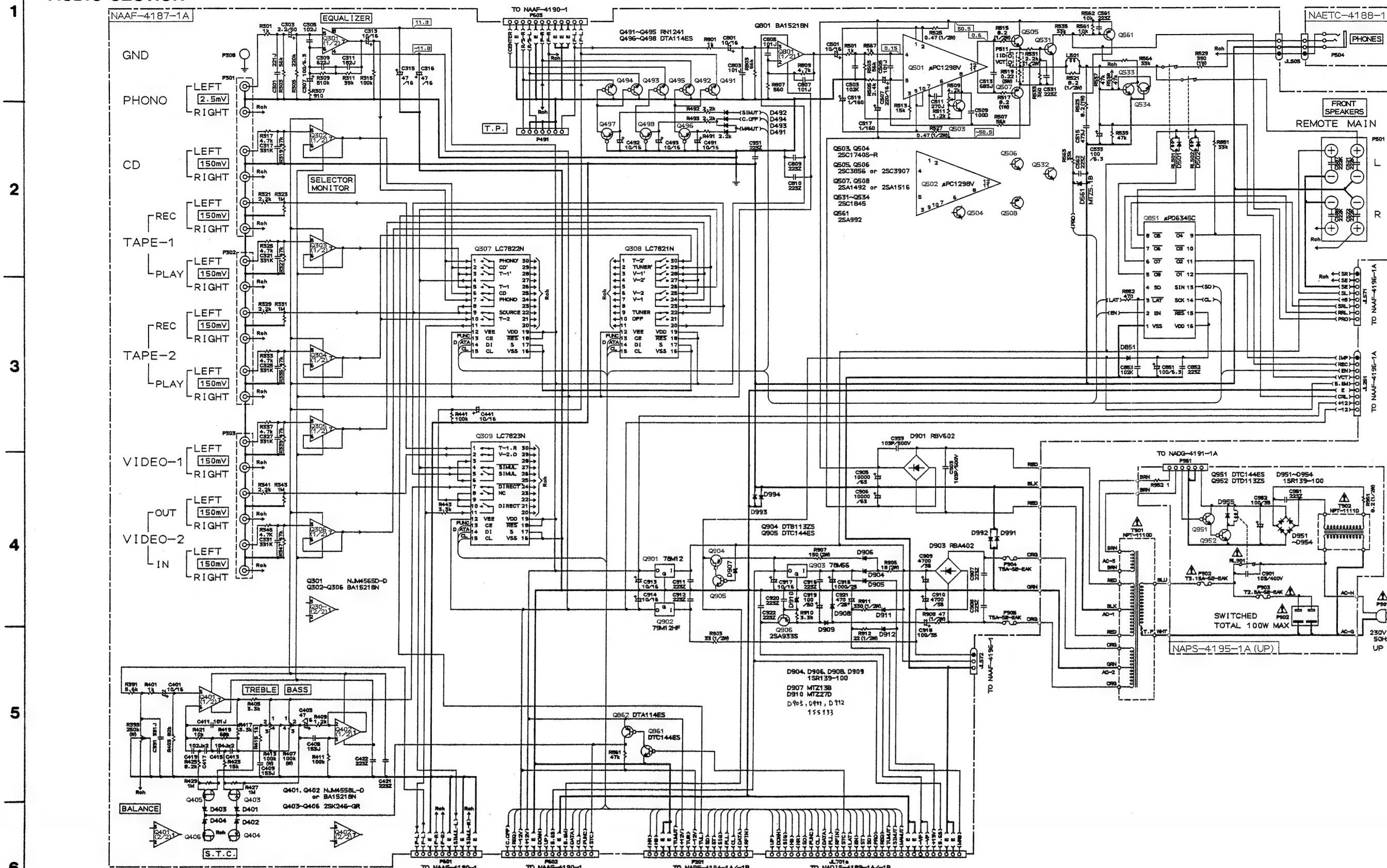
H

**SCHEMATIC DIAGRAM**  
**MODEL TX-7840**  
**TUNER AND VIDEO SECTION**



A      B      C      D      E      F      G      H

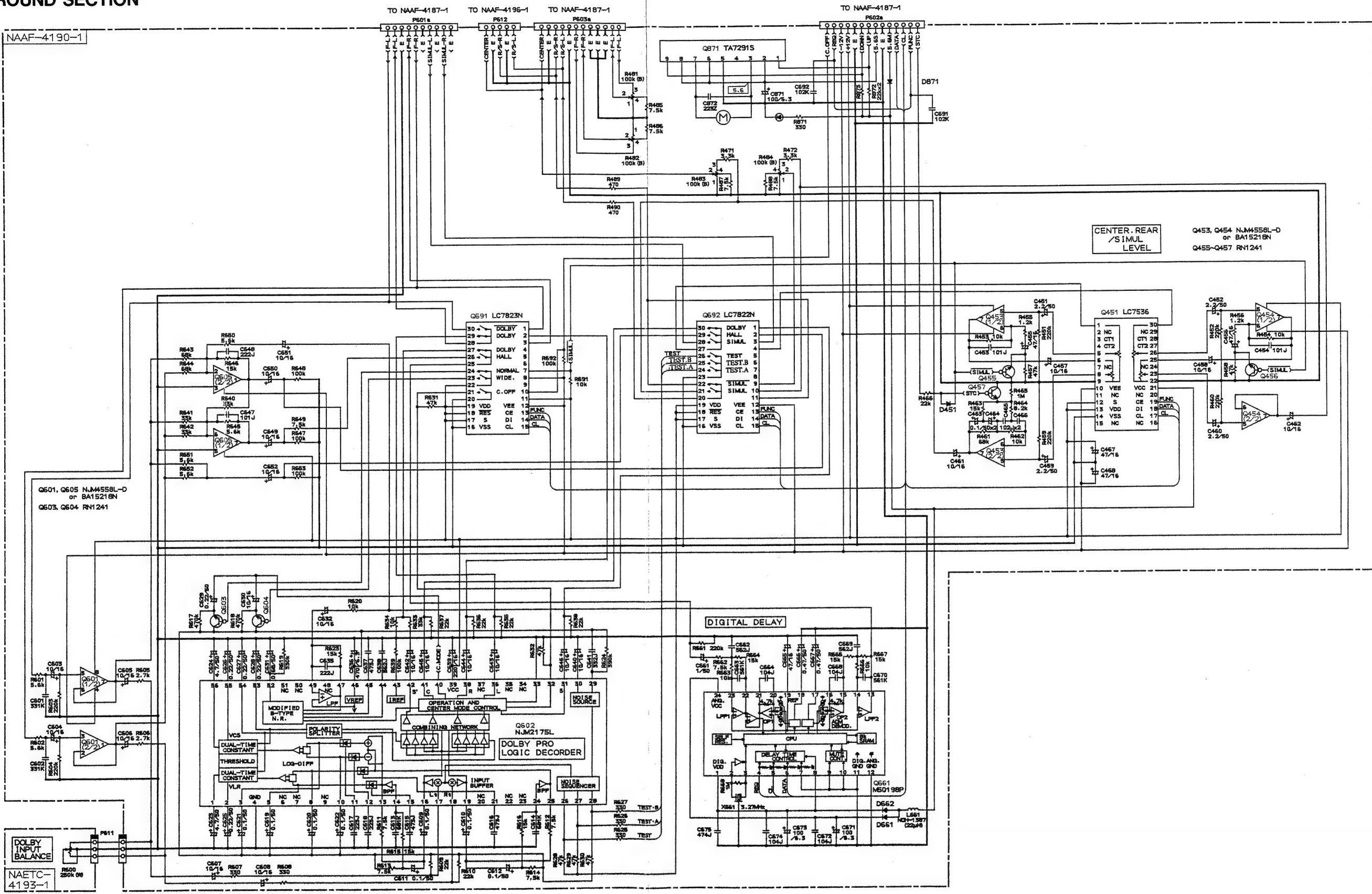
**SCHEMATIC DIAGRAM  
MODEL TX-7840  
AUDIO SECTION**



# **SCHEMATIC DIAGRAM**

## **MODEL TX-7840**

### **SURROUND SECTION**

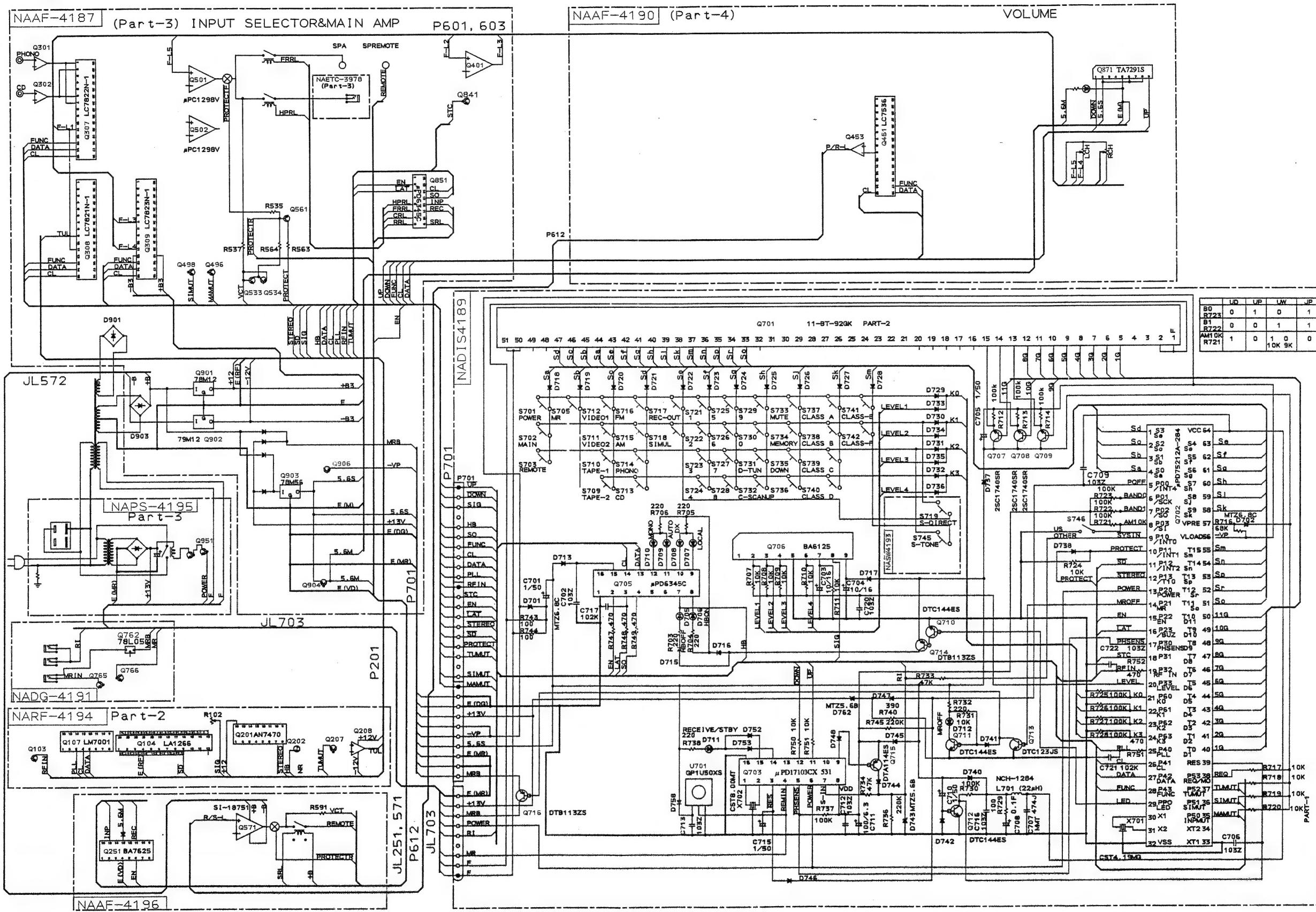


**A** | **B** | **C** | **D** | **E** | **F** | **G**

# **SCHEMATIC DIAGRAM**

## **MODEL TX-7830**

### **DIAGRAM OF MICROPROCESSOR**



A

B

C

D

E

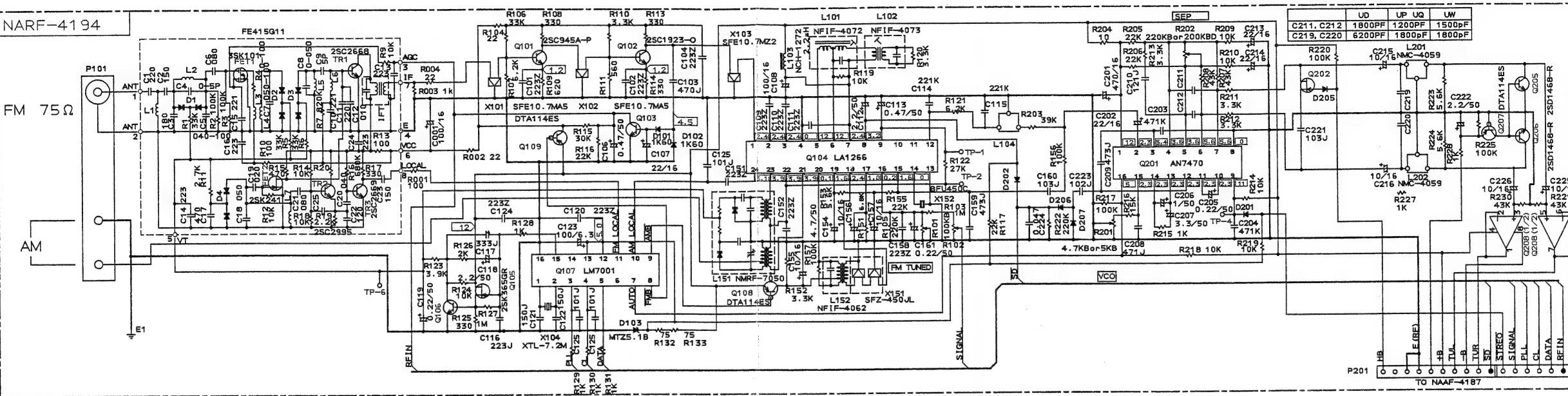
F

G

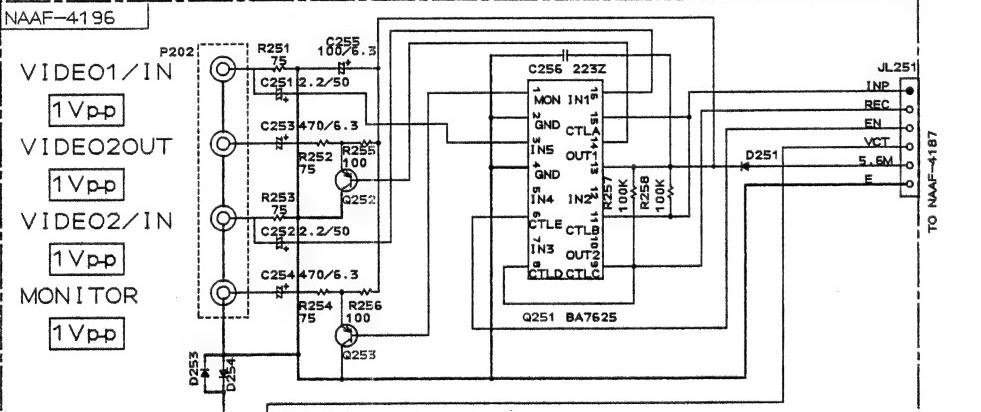
H

**SCHEMATIC DIAGRAM  
MODEL TX-7830  
TUNER AND VIDEO SECTION**

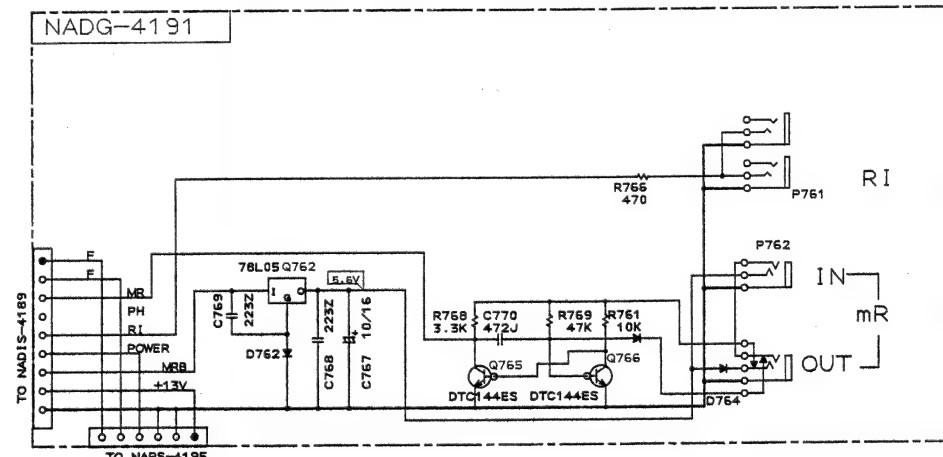
1



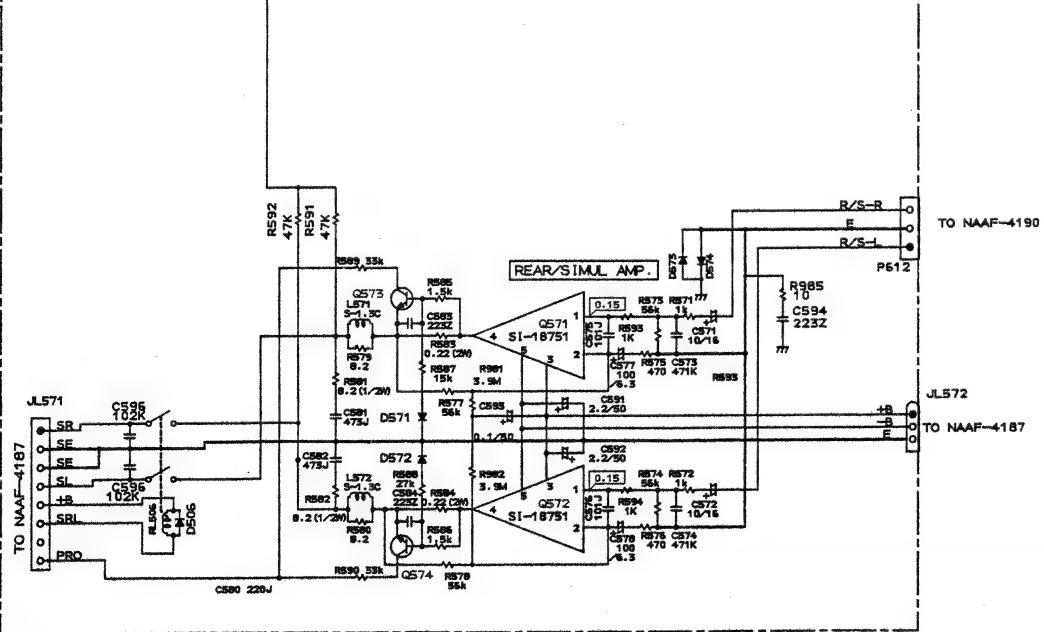
2



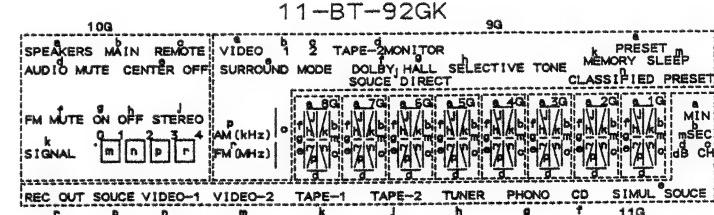
3



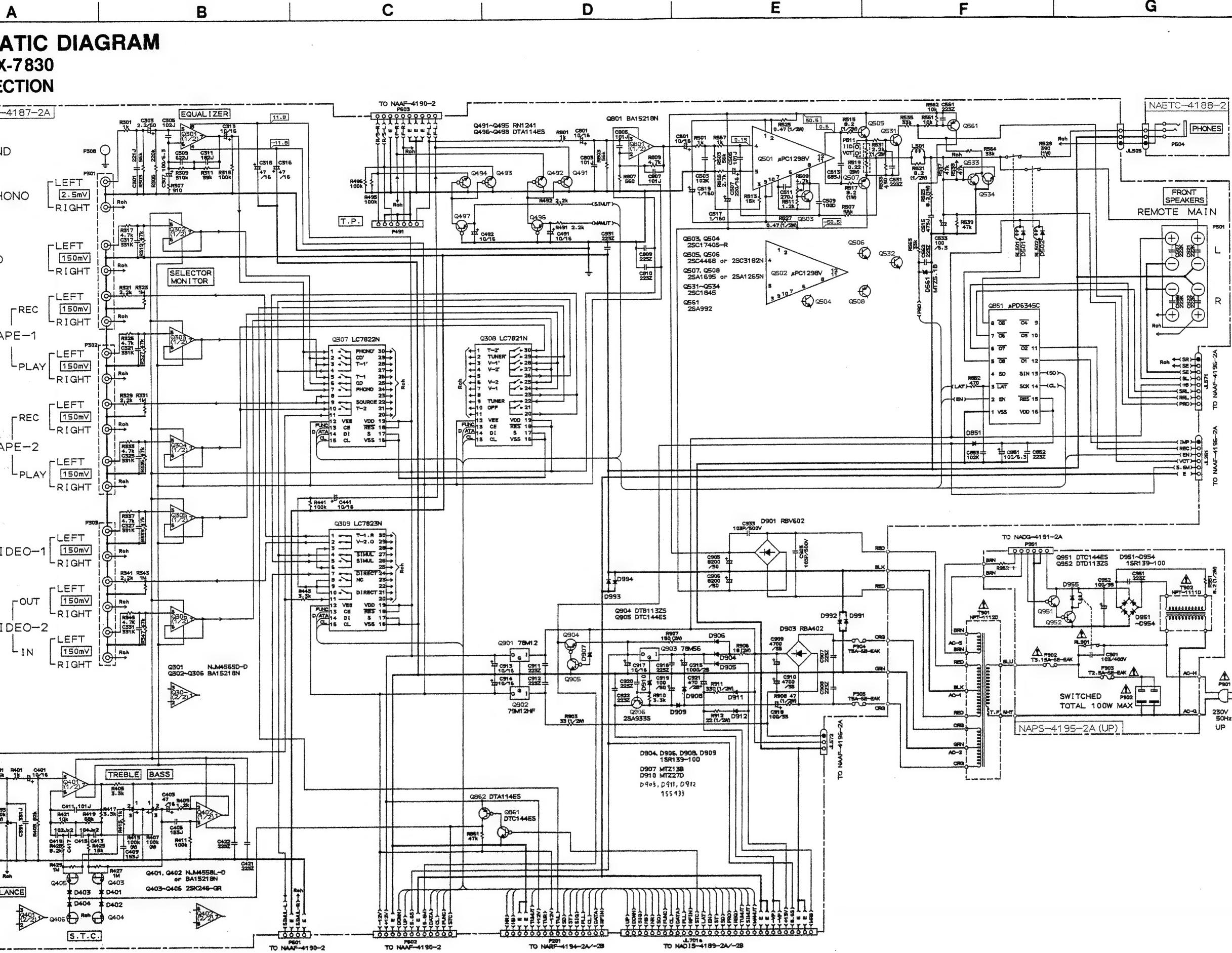
4



5



6



# PRINTED CIRCUIT BOARD PARTS LIST

## MODEL TX-7840

CAUTION: Replacement for transistor of mark  $\star$ , if necessary  
must be made from the same beta group (HFE) as the  
original type.

NOTE: THE COMPONENTS IDENTIFIED BY MARK  $\Delta$   
ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC  
SHOCK. REPLACE ONLY WITH PART NUMBER  
SPECIFIED.

SELECTOR AND POWER AMPLIFIER PC BOARD (NAAAF-4187-1A)			CIRCUIT NO. PART NO. DESCRIPTION			CIRCUIT NO. PART NO. DESCRIPTION			CIRCUIT NO. PART NO. DESCRIPTION		
CIRCUIT NO.	PART NO.	DESCRIPTION	C391,C392	373303314	Capacitors	C391,C392	373303314	330pF $\pm$ 5%,125V,Plastic	JL701a	25050610	Sockets
	ICs		C401,C402	391941007		C401,C402	391941007	10 $\mu$ F,16V,Elect.		NSCT-30P421	Switches
Q301	22240191	NJM4565D-D	BA15218N	C403,C404		BA15218N	354744709	47 $\mu$ F,16V,Elect.	F904a,F905a	25050065	$\Delta$ YSH403T
Q302-Q306	22240247		LC7822N	C405,C406		LC7822N	374721534	0.015 $\mu$ F $\pm$ 5%,50V,Plastic		25050065	Fuseholders
Q307	22240270		LC7821N	C409,C410		LC7821N	374721534	0.015 $\mu$ F $\pm$ 5%,50V,Plastic	F904,F905	252078	$\Delta$ 5A-SE-EAK,Secondary
Q308	22240280		LC7823N	C413-C416		LC7823N	374721044	0.1 $\mu$ F $\pm$ 5%,50V,Plastic		Fuse Rating Labels	
Q309	22240339		C417-C420	374721024		C417-C420	374721024	1000pF $\pm$ 5%,50V,Plastic	F904b,F905b	29360419	T5A/250V
Q401,Q402	22240247 or 22240293	BA15218N or NJM4558L-D	C441,C442	391941007		BA15218N or NJM4558L-D	391941007	10 $\mu$ F,16V,Elect.	Radiator	27160262	Q501,Q502
Q501,Q502	22240311	$\mu$ PC1298V	C491-C493	391941007		C501,C502	391941007	10 $\mu$ F,16V,Elect.		27160209	RAD-67
Q801	22240247	BA15218N	C507,C508	354742219		C507,C508	354742219	220 $\mu$ F,16V,Elect.			
Q851	22240211	$\mu$ PD6345C	C513,C514	374726834		C513,C514	374726834	0.068 $\mu$ F $\pm$ 5%,50V,Plastic	HEADPHONE TERMINAL PC BOARD (NAETC-4188-1)		
Q901	222780122NEC	78M12	C515,C516	374724734		C515,C516	374724734	0.047 $\mu$ F $\pm$ 5%,50V,Plastic	CIRCUIT NO.	P504	25045255
Q902	222790125	79M12	C517-C520	354700109		C517-C520	354700109	1 $\mu$ F,160V,Elect.	DESCRIPTION	YKB21-5009	
Q903	222780565JRC	78M56	C533	391921017		C533	391921017	100 $\mu$ F,6.3V,Elect.			
	Transistors		C801,C802	391941007		C801,C802	391941007	10 $\mu$ F,16V,Elect.	DISPLAY CIRCUIT PC BOARD (NADIS-4189-1A)		
Q403-Q406	2211945	2SK246-GR	C851	391921017		C851	391921017	100 $\mu$ F,6.3V,Elect.	CIRCUIT NO.	U701	24130003
Q491-Q495	2213631 or	RN1241-A or	C905,C906	3504244		C905,C906	3504244	10000 $\mu$ F,63V,Elect.	DESCRIPTION	FL Tube	212099
	2213632	RN1241-B	C909,C910	3504213		C909,C910	3504213	4700 $\mu$ F,35V,Elect.	Q701	11-BT-92GK	
Q496-Q498	2213510	DTA114ES	C913,C914	391941007		C913,C914	391941007	10 $\mu$ F,16V,Elect.			
Q503,Q504	2213284	2SC1740S-R	C915	354751029		C915	354751029	1000 $\mu$ F,25V,Elect.	CIRCUIT NO.	Q702	22240486
Q505,Q506	2201653, 2201654, 2201655, 2202272 or 2202273	* 2SC3856-O, * 2SC3856-Y, * 2SC3856-P, * 2SC3907-R or * 2SC3907-O	C917	391941007		C917	391941007	10 $\mu$ F,16V,Elect.	DESCRIPTION	Q703	$\mu$ PD75212ACW-284
			C918	354761019		C918	354761019	100 $\mu$ F,35V,Elect.		Q705	$\mu$ PD17103CX-531
			C919	354781019		C919	354781019	100 $\mu$ F,50V,Elect.		Q706	$\mu$ PD6345C
			C921	354754719		C921	354754719	470 $\mu$ F,25V,Elect.			BA6125
Q507,Q508	2201663, 2201664, 2201665, 2202262 or 2202263	* 2SA1492-O, * 2SA1492-Y, * 2SA1492-P, * 2SA1516-R or * 2SA1516-O	R393	5104225		R393	5104225	N11RGLC250KWT22Z, Balance,Variable N14RLC100KWT22Z, Bass,Variable N14RLC100KWT22Z, Treble,Variable	Transistors	Q707-Q709	2213284
			R407,R408	5104230		R407,R408	5104230	N06HR5KBC,Idling,		Q710-Q712	221282
Q531-Q534	2211732 or 2211733	2SC1845-F or 2SC1845-E	R413,R414	5104230		R413,R414	5104230		Q713	2213640	DTC144ES
Q561	2211792 or 2211793	2SA992-F or 2SA992-E	R509,R510	5210261		R509,R510	5210261		Q714,Q716	2213830	DTC123JS
			R515,R516	442520824		R515,R516	442520824	8.2 $\Omega$ ,1/2W,Metal oxide film	Q715	2213510	DTB113ZS
Q861,Q905	221282	DTC144ES	R517,R518	441620824		R517,R518	441620824	8.2 $\Omega$ ,1W,Metal oxide film	L661	233411K220	NCH-1387
Q862	2213510	DTA114ES	R519,R520	4500031		R519,R520	4500031	0.22 $\Omega$ ,5W,Metal plate	X661	3010169	Ceramic Oscillator
Q904	2213830	DTB113ZS	R521,R522	442520824		R521,R522	442520824	8.2 $\Omega$ ,1/2W,Metal oxide film	D451	3010169	CST3.27MGW002
Q906	2213354	2SA933S-R	R523,R524	441620824		R523,R524	441620824	8.2 $\Omega$ ,1W,Metal oxide film	D661,D662	223163	1SS133
	Diodes		R525-R528	442524794		R525-R528	442524794	0.47 $\Omega$ ,1/2W,Metal oxide film	D871	223163	1SS133
D401-D404	223163	1SS133	R529,R530	441623914		R529,R530	441623914	390 $\Omega$ ,1W,Metal oxide film	D701,D702	224450623	MTZ6.2C,Zener
D491-D493	223163	1SS133	R531,R532	442522224		R531,R532	442522224	2.2k $\Omega$ ,1/2W,Metal oxide film	D713-D738	223163	1SS133
D501,D502	223163	1SS133	R903	442523304		R903	442523304	33 $\Omega$ ,1/2W,Metal oxide film	D740-D742	223163	1SS133
D561	224450512	MTZ5.1B,Zener	R906	441721804		R906	441721804	18 $\Omega$ ,2W,Metal oxide film	D743,D762	224450562	MTZ5.6B,Zener
D851,D905	223163	1SS133	R907	441721514		R907	441721514	150 $\Omega$ ,2W,Metal oxide film	D744-D748	223163	1SS133
D901	22380038	RBV602	R908	442524704		R908	442524704	47 $\Omega$ ,1/2W,Metal oxide film	D752-D754	223163	1SS133
D903	22380048	RBA402	R911	442523314		R911	442523314	330 $\Omega$ ,1/2W,Metal oxide film	D758	223163	1SS133
D904,D906	22380032	1SR139-100	R912	442522204		R912	442522204	22 $\Omega$ ,1/2W,Metal oxide film	D703,D705	225137CG, SEL2413ECG,	
D907	224450913	MTZ9.1C,Zener	RL501	25065396		RL501	25065396	Relais	D707,D709	225137DG or SEL2413EDG or	
D908,D909	22380032	1SR139-100	RL502	25065339		RL502	25065339	NRL-2P1.25A-DC24-067	D708	225137DY	SEL2413EDY
D910	224452704	MTZ27D,Zener	P301-P303	25045300		P301-P303	25045300	NRL-2P5A-DC24-046	D710-D712	225142	SEL2913K
D911,D912	223163	1SS133	P501	25060159		P501	25060159	Terminals	X701	225142	SEL2913K
D991-D994	223163	1SS133						NPJ-6PDBL159,Input/output NTM-8PDMN085,Speaker	X702	225142	SEL2913K
L501,L502	231176	S-1.3C									
	Capacitors										
C301,C302	373302214	220pF $\pm$ 5%,125V,Plastic	P201	25055502		P201	25055502	NPLG-16P477	C701,C705	353780109</	

NOTE: THE COMPONENTS IDENTIFIED BY MARK $\Delta$ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.			NOTE: THE COMPONENTS IDENTIFIED BY MARK $\Delta$ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.			
CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION	
C664	374721044	Capacitors 0.01 $\mu$ F $\pm$ 5%,50V,Plastic	D101,D102	223132	Diodes 1K60	
C665	354744709	47 $\mu$ F,16V,Elect.	D103	224450512	MTZ5.1B,Zener	
C666,C667	354784799	0.47 $\mu$ F,50V,Elect.	D201-D207	223163	Coils and Transformers 1SS133	
C668,C672	374721044	0.1 $\mu$ F $\pm$ 5%,50V,Plastic	L101	233401	NFIF-4072,IFT	
C669	374725624	5600pF $\pm$ 5%,50V,Plastic	L102	233402	NFIF-4073,IFT	
C671,C673	391921017	100 $\mu$ F,6.3V,Elect.	L103	233411M022	NCH-1375	
C674	374721044	0.1 $\mu$ F $\pm$ 5%,50V,Plastic	L104	233383	NMC-6070	
C675	375524744	0.47 $\mu$ F $\pm$ 5%,50V,Plastic	L151	232148	NMRF-7050,AM RF block	
C871	391921017	100 $\mu$ F,6.3V,Elect.	L152	232139	NMF-4062,IFT	
R481-R484	5144014A	Resistor N16RQL100KBT25F, Variable,Volume	L201,L202	233355A	NMC-4059,LPF	
	Sockets		X101,X102	3010071	Ceramic Filters SFE10.7MA5	
P601a	25050446	NSCT-10P270	X103	3010130	SFE10.7MZ2	
P602a	25050448	NSCT-14P272	X151	3010123	SFZ-450JL	
P603a	25050447	NSCT-12P271	X152	3010076	BFU-450C	
P611	2000556	NSAS-6P512	X104	3010141	X'tal XTL-7.2M	
P612	2009990024	NSAS-10P0048			Capacitors	
RI/mR TERMINAL PC BOARD (NADG-4191-1A)						
CIRCUIT NO.	PART NO.	DESCRIPTION	C001	354741019	100 $\mu$ F,16V,Elect.	
Q762	222780053	78L05,IC	C106	354784799	0.47 $\mu$ F,50V,Elect.	
Q765,Q766	221282	DTC144ES,Transistors	C107	354742209	22 $\mu$ F,16V,Elect.	
D761,D762	223163	1SS133,Diodes	C108	354741019	100 $\mu$ F,16V,Elect.	
D764,D765	223163	1SS133,Diodes	C112	354780229	2.2 $\mu$ F,50V,Elect.	
C767	354741009	10 $\mu$ F,16V,Elect. capacitor	C113	354784799	0.47 $\mu$ F,50V,Elect.	
C770	374724724	4700pF $\pm$ 5%,50V, Plastic capacitor	C116	374722234	0.022 $\mu$ F $\pm$ 5%,50V,Plastic	
			C117	374723334	0.033 $\mu$ F $\pm$ 5%,50V,Plastic	
			C118	354780229	2.2 $\mu$ F,50V,Elect.	
P761	25045172	HSJ-1003-01-020,Terminal RI	C119	354782299	0.22 $\mu$ F,50V,Elect.	
P762	25045293	HSJ-1003-01-012,Terminal mR	C123	354721019	100 $\mu$ F,6.3V,Elect.	
P951a	25050444	NSCT-6P268,Socket	C124	354741019	100 $\mu$ F,16V,Elect.	
			C125	354780479	4.7 $\mu$ F,50V,Elect.	
OPERATION SWITCH PC BOARD (NASW-4192-1)						
CIRCUIT NO.	PART NO.	DESCRIPTION	C155-C157	354741009	10 $\mu$ F,16V,Elect.	
S719	25035548	NPS-111-S510,Switch	C159	374724734	0.047 $\mu$ F $\pm$ 5%,50V,Plastic	
S743,S744	25035548	NPS-111-S510,Switches	C160	374721034	0.01 $\mu$ F $\pm$ 5%,50V,Plastic	
P702	25050456	NSCT-5P280,Socket	C161	354782299	0.22 $\mu$ F,50V,Elect.	
			C201	354744719	470 $\mu$ F,16V,Elect.	
			C202	354742209	22 $\mu$ F,16V,Elect.	
			C205	354782299	0.22 $\mu$ F,50V,Elect.	
			C206	354780109	1 $\mu$ F,50V,Elect.	
R600	5104258	N11RGLC250KWT15Z, Variable resistor	C207	354780339	3.3 $\mu$ F,50V,Elect.	
			C208	370134714	470pF $\pm$ 5%,100V,Plastic	
			C209	374724734	0.047 $\mu$ F $\pm$ 5%,50V,Plastic	
INPUT BALANCE VOLUME PC BOARD (NAETC-4193-1)						
CIRCUIT NO.	PART NO.	DESCRIPTION	C211,C212	374721224	1200pF $\pm$ 5%,50V,Plastic	
			C213,C214	354742209	22 $\mu$ F,16V,Elect.	
			C215,C216	354741009	10 $\mu$ F,16V,Elect.	
TU001	240089	FB415-G11	C217,C218	374728224	8200pF $\pm$ 5%,50V,Plastic	
			C219,C220	374721824	1800pF $\pm$ 5%,50V,Plastic	
			C221	374721034	0.01 $\mu$ F $\pm$ 5%,50V,Plastic	
			C222	354780229	2.2 $\mu$ F,50V,Elect.	
			C224	374724734	0.047 $\mu$ F $\pm$ 5%,50V,Plastic	
			C225,C226	354741009	10 $\mu$ F,16V,Elect.	
			R101	5210266	Resistors N06HR100KBC,Semi-fixed	
			R102,R202	5210267	N06HR200KBC,Semi-fixed	
			R201	5210261	N06HR5KBC,Semi-fixed	
			P101	25060087	Terminal NTM-2PDMN31	
			P201	25050449	Socket NSCT-16P273	
POWER SUPPLY CIRCUIT PC BOARD (NAPS-4195-1A)						
CIRCUIT NO.	PART NO.	DESCRIPTION	D951-D954	22380032	1SR139-100	
			Q951	221282	DTC144ES	
			Q952	2213650	DTD113ZS	
					Diodes	
			D955	223163	1SS133	
			D995,D996	223163	1SS133	
					Power transformer	
			T902	2300671	$\Delta$ NPT-1111P	
				C901	3500065A	$\Delta$ DE7150FZ103PAC400V/125V,IS
				C952	354761019	100 $\mu$ F,35V,Elect.
				R951	442520824	8.2 $\Omega$ ,1/2W,Metal oxide film
				P902	25050640	AC outlet $\Delta$ NSCT-4P451
				RL901	25065248	Relay $\Delta$ NRL-1P15A-DC12-29
				F902	252076	Fuses $\Delta$ 3.15A-SE-EAK,Primary
				F903	252075	$\Delta$ 2.5A-SE-EAK,AC outlet
				F902a,F903a	25050065	Fuseholders $\Delta$ YSH403T
				P951	25055497	Plug NPLG-6P472
VIDEO AND REAR AMPLIFIER PC BOARD (NAAF-4196-1A)						
CIRCUIT NO.	PART NO.	DESCRIPTION	Q251	22240373	ICs BA7625	
			Q571,Q572	22240467	Q571,Q572 SI-18751	
			Q881	22240247	Q881 BA15218N	
					Transistors	
			Q252,Q253	2213354	Q252,Q253 2SA933S-R	
			Q573,Q574	2211732 or 2211733	Q573,Q574 2SC1845-F or 2SC1845-E	
			Q882	2213631 or 2213632	Q882 RN1241-A or RN1241-B	
			Q883	2213510	Q883 DTA114ES	
			D251	223163	Diodes 1SS133	
			D253,D254	223163	D251,D254 1SS133	
			D505,D506	223163	D505,D506 1SS133	
			D571-D574	223163	D571-D574 1SS133	
			L571,L572	231176	Coils S-1.3C	
					Capacitors	
			C251,C252	391980227	C251,C252 2.2 $\mu$ F,50V,Elect.	
			C253,C254	354724719	C253,C254 470 $\mu$ F,6.3V,Elect.	
			C255	391921017	C255 100 $\mu$ F,6.3V,Elect.	
			C571,C572	391941007	C571,C572 10 $\mu$ F,16V,Elect.	
			C577,C578	354741019	C577,C578 100 $\mu$ F,16V,Elect.	
			C581,C582	374724734	C581,C582 0.047 $\mu$ F $\pm$ 5%,50V,Plastic	
			C591,C592	391980227	C591,C592 2.2 $\mu$ F,50V,Elect.	
			C593	354781099	C593 0.1 $\mu$ F,50V,Elect.	
			C881,C886	391941007	C881,C886 10 $\mu$ F,16V,Elect.	
					Resistors	
			R581,R582	442520824	R581,R582 8.2 $\Omega$ ,1/2W,Metal oxide film	
			R583,R584	4000059	R583,R584 0.22 $\Omega$ ,2W,Metal plate	
					Relais	
			RL505,RL506	25065339	RL505,RL506 NRL-2P5A-DC24-046	

# PRINTED CIRCUIT BOARD PARTS LIST

## MODEL TX-7830

CAUTION: Replacement for transistor of mark  $\star$ , if necessary  
must be made from the same beta group (HFE) as the  
original type.

### SELECTOR AND POWER AMPLIFIER PC BOARD (NAAF-4187-2A)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors			Socket	
	C401,C402	391941007 10 $\mu$ F,16V,Elect.	JL701a	25050610	NSCT-30P421
	C403,C404	354744709 47 $\mu$ F,16V,Elect.		F904a,F905a	Fuseholders
Q301	22240191	NJM4565D-D C405,C406 374721534 0.015 $\mu$ F $\pm$ 5%,50V,Plastic		25050065	! YSH403T
Q302-Q306	22240247	BA15218N C409,C410 374721534 0.015 $\mu$ F $\pm$ 5%,50V,Plastic		F904,F905	252078 ! 5A-SE-EAK,Secondary
Q307	22240270	LC7822N C413-C416 374721044 0.1 $\mu$ F $\pm$ 5%,50V,Plastic		F904b,F905b	29360419 T5A/250V
Q308	22240280	LC7821N C417-C420 374721024 1000pF $\pm$ 5%,50V,Plastic		Radiator	27160262 Q501,Q502
Q309	22240339	LC7823N C441,C442 391941007 10 $\mu$ F,16V,Elect.		27160209	RAD-67
Q401,Q402	22240247 or 22240293	BA15218N or NJM4558L-D C491,C492 391941007 10 $\mu$ F,16V,Elect.			
Q501,Q502	22240311	$\mu$ PC1298V C507,C508 354742219 220 $\mu$ F,16V,Elect.			
Q801	22240247	BA15218N C513,C514 374726834 0.068 $\mu$ F $\pm$ 5%,50V,Plastic			
Q851	22240211	$\mu$ PD6345C C515,C516 374724734 0.047 $\mu$ F $\pm$ 5%,50V,Plastic			
Q901	222780122NEC	78M12 C517-C520 354700109 1 $\mu$ F,160V,Elect.			
Q902	222790125	79M12 C533 391921017 100 $\mu$ F,6.3V,Elect.			
Q903	222780565JRC	78M56 C801,C802 391941007 10 $\mu$ F,16V,Elect.			
	Transistors	C851 391921017 100 $\mu$ F,6.3V,Elect.			
Q403-Q406	2211945	2SK246-GR C905,C906 3504245 8200 $\mu$ F,50V,Elect.			
Q491-Q494	2213631 or 2213632	RN1241-A or RN1241-B C909,C910 3504213 4700 $\mu$ F,35V,Elect.			
Q496,Q497	2213510	DTA114ES C913,C914 391941007 10 $\mu$ F,16V,Elect.			
Q503,Q504	2213284	2SC1740S-R C915 354751029 1000 $\mu$ F,25V,Elect.			
Q505,Q506	2202523, 2202524, 2202526, 2202292 or 2202293	* 2SC4468-O, * 2SC4468-Y, * 2SC4468-P, * 2SC3182N-R or * 2SC3182N-O R393 5104225 N11RGLC250KWT22Z, Balance,Variable			
Q507,Q508	2202513, 2202514, 2202516, 2202282 or 2202283	* 2SA1695-O, * 2SA1695-Y, * 2SA1695-P, * 2SA1265N-R or * 2SA1265N-O R407,R408 5104230 N14RLC100KWT22Z, Bass,Variable			
Q531-Q534	2211732 or 2211733	2SC1845-F or 2SC1845-E R509,R510 5210261 N06HR5KBC,Idling, Semi-fixed			
Q561	2211792 or 2211793	2SA992-F or 2SA992-E R515,R516 442520824 8.2 $\Omega$ ,1/2W,Metal oxide film			
Q861,Q905	221282	DTC144ES R517,R518 441620824 8.2 $\Omega$ ,1W,Metal oxide film			
Q862	2213510	DTA114ES R519,R520 4500031 0.22 $\Omega$ ,5W,Metal plate			
Q904	2213830	DTB113ZS R521,R522 442520824 8.2 $\Omega$ ,1/2W,Metal oxide film			
Q906	2213354	2SA933S-R R523,R524 441620824 8.2 $\Omega$ ,1W,Metal oxide film			
	Diodes	R525-R528 442524794 0.47 $\Omega$ ,1/2W,Metal oxide film			
D401-D404	223163	1SS133 R529,R530 441623914 390 $\Omega$ ,1W,Metal oxide film			
D501,D502	223163	1SS133 R531,R532 442522224 2.2k $\Omega$ ,1/2W,Metal oxide film			
D561	224450512	MTZ5.1B,Zener R903 442523304 33 $\Omega$ ,1/2W,Metal oxide film			
D851,D905	223163	1SS133 R906 441721804 18 $\Omega$ ,2W,Metal oxide film			
D901	22380038	RBV602 R907 441721514 150 $\Omega$ ,2W,Metal oxide film			
D903	22380048	RBA402 R908 442524704 47 $\Omega$ ,1/2W,Metal oxide film			
D904,D906	22380032	1SR139-100 R911 442523314 330 $\Omega$ ,1/2W,Metal oxide film			
D907	224450913	MTZ9.1C,Zener R912 442522204 22 $\Omega$ ,1/2W,Metal oxide film			
D908,D909	22380032	1SR139-100 RL501 25065396 NRL-2P1.25A-DC24-067 Relais			
D910	224452704	MTZ27D,Zener RL502 25065339 NRL-2P5A-DC24-046			
D911,D912	223163	1SS133 P301-P303 25045300 NPJ-6PDDBL159,Input/output Terminals			
D991-D994	223163	1SS133 P501 25060159 NTM-8PDMN085,Speaker Plugs			
L501,L502	231176	S-1.3C P201 25055502 NPLG-16P477			
	Capacitors	C301,C302 373302214 220pF $\pm$ 5%,125V,Plastic P491 25055583 NPLG-7P554			
		C303,C304 391980227 2.2 $\mu$ F,50V,Elect. P511,P512 25055493 NPLG-2P468			
		C305,C306 373301024 1000pF $\pm$ 5%,125V,Plastic P601 25055496 NPLG-4P471			
		C307,C308 391921017 100 $\mu$ F,6.3V,Elect. P602 25055500 NPLG-12P475			
		C309,C310 374726224 6200pF $\pm$ 5%,50V,Plastic P603 25055499 NPLG-10P474			
		C311,C312 374721824 1800pF $\pm$ 5%,50V,Plastic P991 260224 CP-1S			
		C313,C314 391941007 10 $\mu$ F,16V,Elect. Clamp			
		C315,C316 354744709 47 $\mu$ F,16V,Elect. P742 49163104406 100k $\Omega$ $\times$ 6,1/10W,Network			
		C317,C318 373303314 330pF $\pm$ 5%,125V,Plastic P991 260224 CP-1S			
		C391,C392 373303314 330pF $\pm$ 5%,125V,Plastic			

NOTE: THE COMPONENTS IDENTIFIED BY MARK  $\Delta$   
ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC  
SHOCK. REPLACE ONLY WITH PART NUMBER  
SPECIFIED.

CIRCUIT NO.	PART NO.	DESCRIPTION
S701-S703	25035548	NPS-111-S510
S705	25035548	NPS-111-S510
S709-S718	25035548	NPS-111-S510
S721-S742	25035548	NPS-111-S510
Plug	25055512	NPLG-5P487
JL701b	25050576	NSCT-30P387
Holders	27190842	LED9
Q702a	27190843	LED1
D711a	27190843	LED1
DISPLAY CIRCUIT PC BOARD (NADIS-4189-2A)		
CIRCUIT NO.	PART NO.	DESCRIPTION
P504	25045255	YKB21-5009
RI/mR TERMINAL PC BOARD (NADG-4191-2A)		
CIRCUIT NO.	PART NO.	DESCRIPTION
Q451	22240468	LC7536
Q453,Q454	22240247 or 22240293	BA15218N or NJM4558L-D
U701	24130003	GPI150XS
FL Tube	212099	11-BT-92GK
ICs	Q702	$\mu$ PD7521ACW-284
	Q703	$\mu$ PD17103CX-531
	Q705	$\mu$ PD6345C
	Q706	BA6125
Transistors	Q707-Q709	2SC1740S-R
	Q710-Q712	221282 DTC144ES
	Q713	2213640 DTC123JS
	Q714,Q716	2213830 DTB113ZS
	Q715	2213510 DTA114ES
Diodes	Q716	2213510 DTA114ES
	Q717	2213510 DTA114ES
	Q718	2213510 DTA114ES
	Q719	2213510 DTA114ES
	Q720	2213510 DTA114ES
	Q721	2213510 DTA114ES
	Q722	2213510 DTA114ES
	Q723	2213510 DTA114ES
	Q724	2213510 DTA114ES
	Q725	2213510 DTA114ES
	Q726	2213510 DTA114ES
	Q727	2213510 DTA114ES
	Q728	2213510 DTA114ES
	Q729	2213510 DTA114ES
	Q730	2213510 DTA114ES
	Q731	2213510 DTA114ES
	Q732	2213510 DTA114ES
	Q733	2213510 DTA114ES
	Q734	2213510 DTA114ES
	Q735	2213510 DTA114ES
	Q736	2213510 DTA114ES
	Q737	2213510 DTA114ES
	Q738	2213510 DTA114ES
	Q739	2213510 DTA114ES
	Q740	2213510 DTA114ES
	Q741	2213510 DTA114ES
	Q742	2213510 DTA114ES
	Q743	2213510 DTA114ES
	Q744	2213510 DTA114ES
	Q745	2213510 DTA114ES
	Q746	2213510 DTA114ES
	Q747	2213510 DTA114ES</

NOTE: THE COMPONENTS IDENTIFIED BY MARK  $\Delta$   
ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC  
SHOCK. REPLACE ONLY WITH PART NUMBER  
SPECIFIED.

## TUNER CIRCUIT PC BOARD(NARF-4194-2A)

CIRCUIT NO.	PART NO.	DESCRIPTION
TU001	Front end	
	240089	FE415-G11
	ICs	
Q104	22240039	LA1266
Q107	22240090	LM7001
Q201	22240242	AN7470
Q208	22240247 or 22240293	BA15218N or NJM4558L-D
	Transistors	
Q101	2210746	2SC945A-P
Q102	2211723	2SC1923-O
Q103	2213284	2SC1740S-R
Q105	2212445	2SK365-GR
Q106	2213284	2SC1740S-R
Q108,Q109	2213510	DTA114ES
Q202	2211945	2SK246-GR
Q205,Q206	2212794	2SD1468-R
Q207	2213510	DTA114ES
	Diodes	
D101,D102	223132	1K60
D103	224450512	MTZ5.1B,Zener
D201,D202	223163	1SS133
D205-D207	223163	1SS133
	Coils and Transformers	
L101	233401	NFIF-4072,IFT
L102	233402	NFIF-4073,IFT
L103	233411M022	NCH-1375
L104	233383	NMC-6070
L151	232148	NMRF-7050,AM RF block
L152	232139	NMIF-4062,IFT
L201,L202	233355A	NMC-4059,LPF
	Ceramic Filters	
X101,X102	3010071	SFE10.7MA5
X103	3010130	SFE10.7MZ2
X151	3010123	SFZ-450JL
X152	3010076	BFU-450C
X104	3010141	XTL-7.2M
	Capacitors	
C001	354741019	100 $\mu$ F,16V,Elect.
C106	354784799	0.47 $\mu$ F,50V,Elect.
C107	354742209	22 $\mu$ F,16V,Elect.
C108	354741019	100 $\mu$ F,16V,Elect.
C112	354780229	2.2 $\mu$ F,50V,Elect.
C113	354784799	0.47 $\mu$ F,50V,Elect.
C116	374722234	0.022 $\mu$ F $\pm$ 5%,50V,Plastic
C117	374723334	0.033 $\mu$ F $\pm$ 5%,50V,Plastic
C118	354780229	2.2 $\mu$ F,50V,Elect.
C119	354782299	0.22 $\mu$ F,50V,Elect.
C123	354721019	100 $\mu$ F,6.3V,Elect.
C124	354741019	100 $\mu$ F,16V,Elect.
C154	354780479	4.7 $\mu$ F,50V,Elect.
C155-C157	354741009	10 $\mu$ F,16V,Elect.
C159	374724734	0.047 $\mu$ F $\pm$ 5%,50V,Plastic
C160	374721034	0.01 $\mu$ F $\pm$ 5%,50V,Plastic
C161	354782299	0.22 $\mu$ F,50V,Elect.
C201	354744719	470 $\mu$ F,16V,Elect.
C202	354742209	22 $\mu$ F,16V,Elect.
C205	354782299	0.22 $\mu$ F,50V,Elect.
C206	354780109	1 $\mu$ F,50V,Elect.
C207	354780339	3.3 $\mu$ F,50V,Elect.
C208	370134714	470pF $\pm$ 5%,100V,Plastic
C209	374724734	0.047 $\mu$ F $\pm$ 5%,50V,Plastic

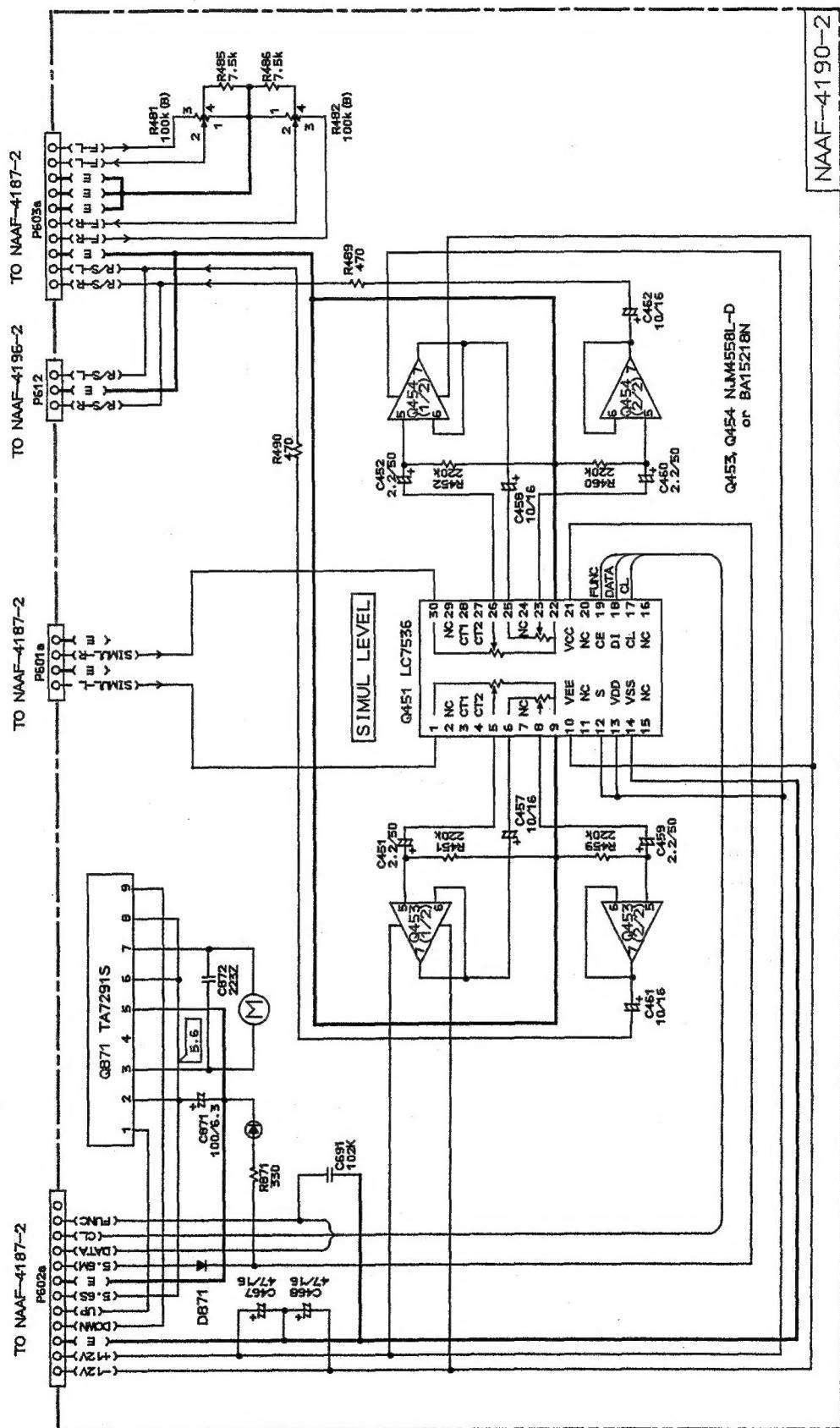
CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C211,C212	374721224	1200pF $\pm$ 5%,50V,Plastic
C213,C214	354742209	22 $\mu$ F,16V,Elect.
C215,C216	354741009	10 $\mu$ F,16V,Elect.
C219,C220	374721824	1800pF $\pm$ 5%,50V,Plastic
C221	374721034	0.01 $\mu$ F $\pm$ 5%,50V,Plastic
C222	354780229	2.2 $\mu$ F,50V,Elect.
C224	374724734	0.047 $\mu$ F $\pm$ 5%,50V,Plastic
C225,C226	354741009	10 $\mu$ F,16V,Elect.
	Resistors	
R101	5210266	N06HR100KBC,Semi-fixed
R102,R202	5210267	N06HR200KBC,Semi-fixed
R201	5210261	N06HR5KBC,Semi-fixed
	Terminal	
P101	25060087	NTM-2PDMN31
P201	25050449	NSCT-16P273
	POWER SUPPLY CIRCUIT PC BOARD (NAPS-4195-2A)	
CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q951	221282	DTC144ES
Q952	2213650	DTD113ZS
	Diodes	
D951-D954	22380032	1SR139-100
D955	223163	1SS133
D995,D996	223163	1SS133
	Power transformer	
T902	2300671	$\Delta$ NPT-1111P
	Capacitors	
C901	3500065A	$\Delta$ DE7150FZ103PAC400V/125V,IS
C952	354761019	100 $\mu$ F,35V,Elect.
	Resistor	
R951	442520824	8.2 $\Omega$ ,1/2W,Metal oxide film
P902	25050640	AC outlet
	Relay	
RL901	25065248	$\Delta$ NSCT-4P451
	Fuses	
F902	252076	$\Delta$ 3.15A-SE-EAK,Primary
F903	252075	$\Delta$ 2.5A-SE-EAK,AC outlet
	Fuseholders	
F902a,F903a	25050065	$\Delta$ YSH403T
	Plug	
P951	25055497	NPLG-6P472

NOTE: <D>: Only 120V model  
 <P>: Only 230V/240V models  
 <W>: Only Worldwide model

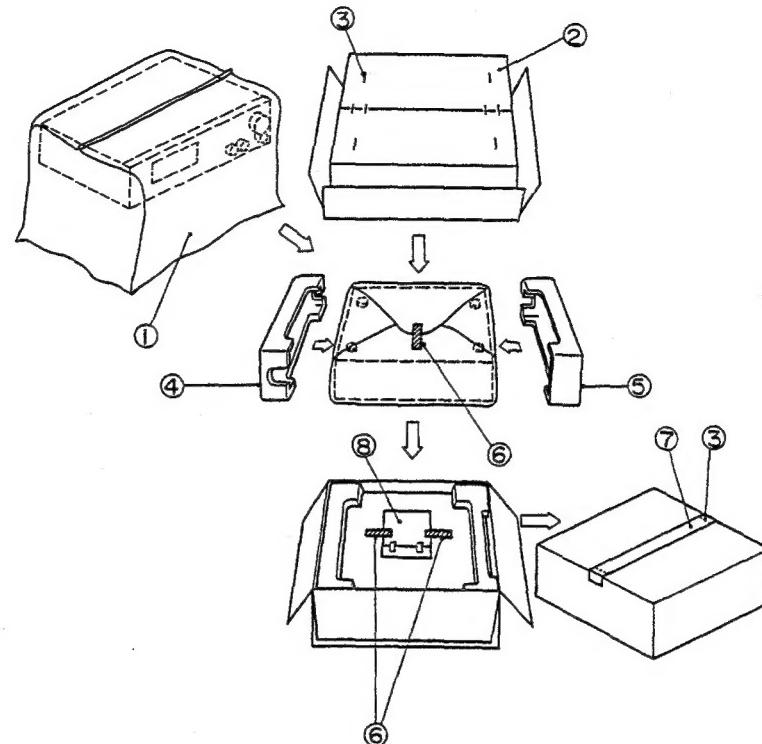
## VIDEO AND SUB AMPLIFIER PC BOARD (NAAF-4196-2A)

CIRCUIT NO.	PART NO.	DESCRIPTION
ICs		
Q251	22240373	BA7625
Q571,Q572	22240467	SI-18751
Transistors		
Q252,Q253	2213354	2SA933S-R
Q573,Q574	2211732 or 2211733	2SC1845-F or 2SC1845-E
Diodes		
D251	223163	1SS133
D253,D254	223163	1SS133
D506	223163	1SS133
D571,D572	223163	1SS133
Coils		
L571,L572	231176	S-1.3C
Capacitors		
C251,C252	391980227	2.2 $\mu$ F,50V,Elect.
C253,C254	354724719	470 $\mu$ F,6.3V,Elect.
C255	391921017	100 $\mu$ F,6.3V,Elect.
C571,C572	391941007	10 $\mu$ F,16V,Elect.
C577,C578	354741019	100 $\mu$ F,16V,Elect.
C581,C582	374724734	0.047 $\mu$ F $\pm$ 5%,50V,Plastic
C583,C584	374721044	0.1 $\mu$ F $\pm$ 5%,50V,Plastic
C591,C592	391980227	2.2 $\mu$ F,50V,Elect.
C593	354781099	0.1 $\mu$ F,50V,Elect.
Resistors		
R581,R582	442520824	8.2 $\Omega$ ,1/2W,Metal oxide film
R583,R584	4000059	0.22 $\Omega$ ,2W,Metal plate
Relay		
RL506	25065339	NRL-2P5A-DC24-046
Terminal		
P251	25045339	NPJ-4PDYE190,Video out.
Plug		
P612a	25055133	NPLG-3P117
Sockets		
JL251	25050270	NSCT-6P98
JL571	25050272	NSCT-8P100
JL572	25050267	NSCT-3P95

**SCHEMATIC DIAGRAM**  
**MODEL TX-7830**  
**VOLUME SECTION**



## PACKING VIEW



REF.NO.	PART NO.	PART NO.	DESCRIPTION
	Model TX-7840	Model TX-7830	
1	29100034	29100034	850×650,Styrene bag
2	29052196	29052198	Master carton box <Black>
		29052199	Master carton box <Silver>
3	282320	282320	Sealing hook
4	29091449B	29091449B	Pad R
5	29091448B	29091448B	Pad L
6	261504	261504	Adhesive tape
7	29110071	29110071	Dampon tape
8	Accessory bag ass'y		
	29341630	29341630	Instruction manual
	292092	292092	FM antenna
	232140	232140	NMA-3057,AM loop antenna
	2010200	2010200	Connection cord RI
	3010054	3010054	UM-3,Two batteries
	24140209		RC-209S,Remote control unit
		24140211	RC-211S,Remote control unit
	29365020B	29365020B	Warranty card
	29100094A	29100094A	Styrene bag for warranty card
	29100097	29100097	850×650,Styrene bag

## SERVICE PROCEDURES

### 1. Replacing the fuses

For continued protection against fire hazard, replace only with same type and same rating fuse.

Circuit no. Part no. Description

F902	252076	△ 3.15A-SE-EAK,Primary fuse
F903	252075	△ 2.5A-SE-EAK,AC outlet fuse
F904,F905	252078	△ 5A-SE-EAK,Secondary fuse

### 2. Change of FM/AM band step.

With the exception of the Worldwide model, a BAND STEP selector switch is not provided.

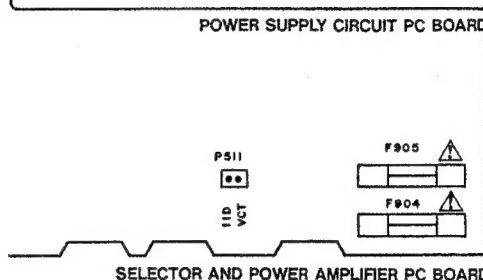
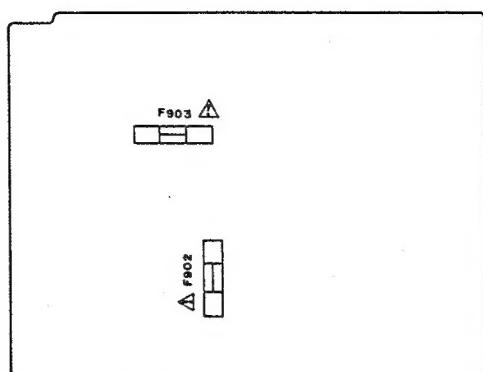
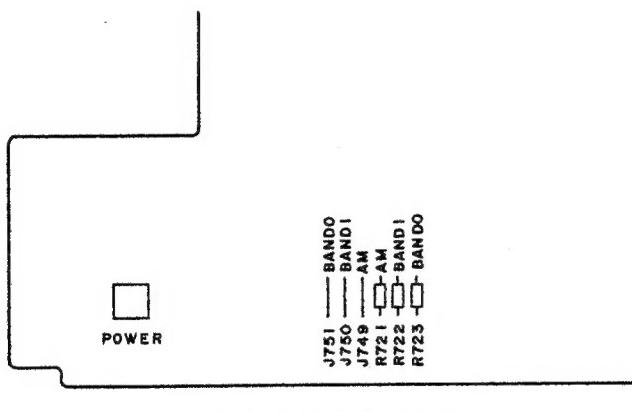
(FM)

BAND STEP	R723	J751
100kHz→50kHz	Addition	Open
50kHz→100kHz	Eliminated	Short

(AM)

BAND STEP	R721	J749
10kHz→ 9kHz	Eliminated	Short
9kHz→10kHz	Addition	Open

In R721 and R722 Carbon resistor 100kΩ (Part No.417341044) are used.



### 3. Memory preservation

This unit does not require memory preservation batteries. A built-in memory power back-up system preserves contents of the memory during power failures and even when the unit is unplugged. The unit must be plugged in and the power switch turned on and off once in order to charge the back-up system. Note that since this is not a permanent memory the power switch must be turned on and off a few times each month to keep the back-up system operative. The period of time during which memory contents are preserved after power has last been turned off varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of 3 to 4 weeks (a minimum of 2 weeks) after the last time power has been turned off. This period is shorter when the unit is exposed to very high humidity or used in an area with an extremely humid climate.

### 4. Safety-check out

After correcting the original service problem perform the following safety check before releasing the set to the customer.

Connect the insulating-resistance tester between the plug of power supply cord and terminal GND on the back panel. Specifications: 3.3 Mohm ±10% at 500V.